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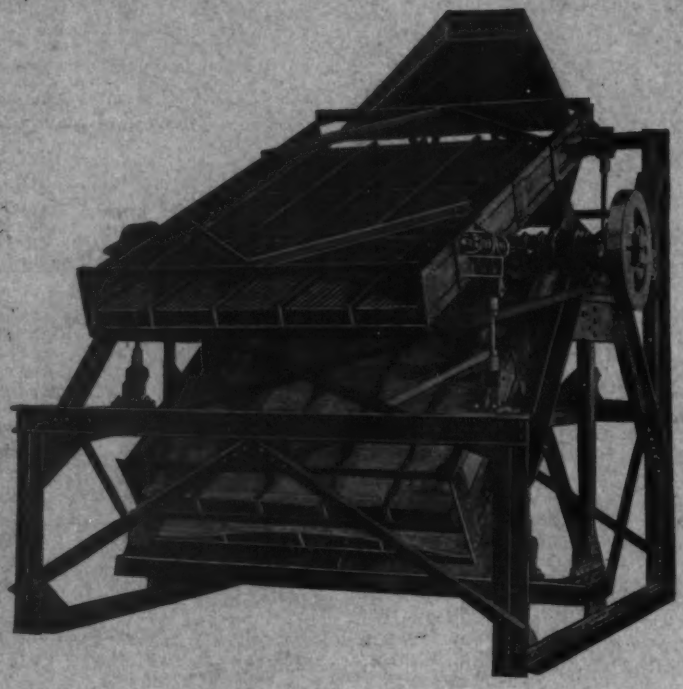

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALME, PRESIDENT — GEO. S. MACDONALD, VICE-PRESIDENT & TREAS. — F. K. HOPPIE, SECRETARY

10 EAST 39TH ST. N.Y. U. S. A

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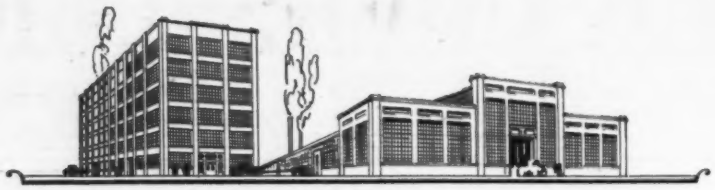

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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

The Magazine of the Paper Industry

Vol. LXXX. No. 18 Thursday, April 30, 1925

Southeastern Superintendents Organize at Richmond

Carl Magnus, Superintendent of the Standard Paper Mfg. Co., Is Chosen President of the New Division of the American Pulp and Paper Mill Superintendents' Association—Successful and Well Attended Two Days' Convention Is Concluded on Friday Evening of Last Week With An Enjoyable Banquet

[FROM OUR REGULAR CORRESPONDENT.]

RICHMOND, Va., April 27, 1925.—Carl Magnus, superintendent of the Standard Paper Manufacturing Company was elected president of the Southeastern Division of the American Pulp and Paper Mill Superintendents Association which it was unanimously decided to form as a result of the two day's convention held here on Thursday and Friday of last week. Mr. Magnus was chairman of the committee of arrangements for the convention.

Other officers were elected as follows: J. P. Eckberg, general manager of the Chesapeake Paper Corporation, West Point, Va., first vice-chairman; J. H. Thickens, general manager of the Mead Fibre Company, Kingsport, Pa., second vice-chairman; W. S. Sprang, superintendent of the Champion Fibre Company, Canton, N. C., third vice-chairman, and J. A. Ramsey, of the Bedford Pulp and Paper Company, Richmond, secretary and treasurer.

Thursday's Sessions

With delegates continuing to arrive throughout the morning, the initial meeting was called to order promptly at 10 o'clock Thursday morning.

R. L. Erminger, of Miamisburg, Ohio, presided as chairman, and introduced Milton E. Marcuse, of Richmond, who welcomed the delegates to the city.

The first paper to be read before the mill superintendents was one on "the Use of White Water in Paper Mills," by F. K. Becker, of South Walpole, Mass. Mr. Becker's paper dealt with the experiences of mills in using white water and the various attempts to make use of the paper-making ingredients it contains after it has passed through the mills and returned to the rivers. White water was described by Mr. Becker as "paper gone wrong."

The morning session on the opening day adjourned at 12:30 o'clock, when the delegates gathered at luncheon in the Chamber of Commerce Club.

Speakers at the afternoon session, which was called to order at 2 o'clock, included Robert S. Crump, president of the Standard Paper Manufacturing Company, Richmond; Major H. H. Hanson, of the Eastern Manufacturing Company, of Bangor, Me., on "The Curling of Fine Papers," and F. K. Becker, of the Bird Machine Company, South Walpole, Mass., on "The Use of White Water in Paper Mills."

The value of the American Pulp and Paper Mill Superintendents' Association as an educational medium in importing new and better ideas in use in the industry was impressed upon the hundred or more mill superintendents gathered in the mezzanine parlor of the Hotel Richmond, Thursday, by E. T. A. Coughlin, vice-president of the association.

At the adjournment of the business session at 5.15 o'clock, Thursday afternoon the convention expressed its appreciation for the co-operation extended by the mill owners, and gave a rising vote of thanks to Mr. Magnus and the committee on arrangements for the reception arranged here.

Paper Manufacturers Entertain

More than 100 delegates were registered for the two-day session, representative of virtually every section of the United States, but particularly the southeast territory. These were entertained Thursday night at a dinner by six Virginia firms—the Albemarle Paper Manufacturing Company, the Standard Paper Manufacturing Company, the Bedford Pulp and Paper Company, the Manchester Board and Paper Company, the Hummell-Ross Fibre Corporation, and the Chesapeake Paper Corporation. A program of special features of entertainment was given incidental to the dinner.

Friday's Sessions

Just what Richmond manufacturers are doing in the half a dozen great paper mills in operation here were shown to the 100 delegates to the convention last Friday afternoon. The visiting mill superintendents were taken on a tour of the mills after luncheon and later were shown the points of interest about the city. They were transported in automobiles provided by the committee on arrangements.

Two papers on subjects connected with the operation and costs in paper and pulp mills were read at the one business session held on Friday, the second and closing day of the convention and the discussions that followed brought to an end the business sessions of the first meeting held by the mill superintendents of the southeastern territory.

An Enjoyable Banquet

The banquet was presided over by James F. Ryland, vice-president and general manager of the Standard Paper Manufacturing Company, of Richmond. He presented the speakers in characteristic fashion, and also handled a diversified program of entertainments, including vocal numbers by two sisters; a series of feats of legerdemain that puzzled even the Gothamites present, and a jazz orchestra, and the party sang lustily all the old favorites, including "Carry Me Back to Ole Virginny."

Mr. Ellerson's talk leaned toward the philosophical. He presented many hints and suggestions as to the way to handle any business, the paper industry particularly, and gave the gathered superintendents a lot of good suggestions.

"Ideal relationship between the heads of departments and the op-

(*Continued on page 38*)

Montreal Learns Details of Several Paper Projects

Manufacture of News Print From Straw to Follow Reported Merger—Arrangement Consummated for Experimental Mill in Montreal—Questions on Federal Power Tax Answered in House of Commons—Contract Let for Pulp Mill on Kagawong River,

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., April 27, 1925.—A new phase of the reported merger of big news print interests in Canada is the announcement that the combine is preparing for the maunfacture on a large scale of news print from straw. E. W. Backus, the president of the Fort Francis Pulp and Paper Company, together with a number of pulp and paper magnates from Montreal, Toronto, Chicago and Minneapolis have been on a visit to Winnipeg in connection with plans for establishing a mill in Western Canada for making paper from straw and it is stated that the party included representatives from the Abitibi Power and Paper Company and the Spanish River Pulp and Paper Mills. After their visit to Winnipeg the party travelled in a special train to Kenora and Fort Francis to inspect the Backus properties at these points and it is said their visit would also extend to the Abitibi's mill at Iroquois Falls and the Spanish River's mills at Sault Ste. Marie. The fact that the Morning Post of London was recently printed on paper made from straw and that the straw paper is reported to have given every satisfaction has been a factor, it is said, in the decision to establish a mill without delay in Western Canada. W. E. Young, of Young, Weir & Co., Toronto, who was a member of the party, is stated to be the fiscal agent for the proposed combine.

Experimental Mill in Montreal

The long-talked-of arrangement between the Canadian Pulp and Paper Association and the Dominion Government for the joint operation and control of the pulp and paper division of the Government's Forests Products Laboratories in Montreal has been satisfactorily consummated. The arrangement involves an outlay of not less than $100,000 by the Association. Associated with the plan is a proposition from McGill University for co-operative research work under which is it expected that a chair in cellulose chemistry will eventually be established at McGill to be financed in part out of a bequest of $200,000 left to the University by the late Mrs. E. B. Eddy, of Hull, for that purpose, whose work will be knit up with that of the laboratories and of the association. It is also anticipated that some time in the future arrangements will be made for the erection of a special building for the laboratories, the present premises being considered inadequate and unfit for the purpose to which they are now being put. An extensive program of investigation has been adopted, looking to new discoveries affecting the economic production and improvements in the properties of the various grades of pulp and paper.

"Competition in the paper industry is daily becoming more keen," said Edward Beck, manager of Canadian Pulp and Paper Association, in describing the new departure, "and our members realize the importance of keeping the industry abreast of new development if Canada is to maintain the position it now holds as a pulp and paper producer. New discoveries are constantly being made which affect the welfare of the industry. The use of sulphite pulp in the manufacture of artificial silk, as an instance, while of comparatively recent origin, has already brought important developments to this branch of the industry and promises still more important changes in the future. It was believed in Europe that pulp of the grade required for silk could not be produced in Canada, but we are producing at the present time sulphite cellulose equal to any which is in considerable demand by silk manufacturers.

"These are some of the things that have actuated our association in entering upon this experiment, but there are numerous other problems awaiting solution. The association has always leaned strongly towards encouraging research, and study and had much to do with the recent production of a series of text-books describing the most modern methods of pulp and paper manufacture, and contributed $25,000 to their cost. These books are now being employed by students and experts in Canada and the United States as well as in some European countries."

The Power Export Tax

Two questions respecting the federal tax on the exportation of power asked by Sir Henry Drayton, have been answered in the House of Commons. Sir Henry asked: (1) Under the regulations of the Government will the tax on the export of electrical power be placed on the exporter, or will such export be made illegal unless paid by the importer? The answer given by Hon. Thomas A. Low, was: "The exporter will pay the tax." (2) Sir Henry also asked in case the tax is placed on the exporter, is any provision made to cover power exported under firm, long-term contracts, or will the municipalities bound by said contract be obliged to pay the said tax? The answer was given as "no." Monthly returns of power exported accompanied by a cheque for the amount of the duty thereon are called for in an Order-in-Council tabled in the House of Commons. It provides that exporters of power shall send such returns, accompanied by the meter readings on which they are based, every month to the Government, and shall compute their tax and enclose a cheque for the amount. A fine of fifty dollars a day is imposed for failure to so report.

Manitoulin Island Pulp Mill

The contract for erecting the half-million dollar groundwood pulp mill on the Kagawong River, Manitoulin Island, has been let. Soon contractors will put up the main mill, the docks, the woodroom and 1,800 feet of 18-foot water power canal. The main mill will be 32 feet by 90 feet, two stories high and will be built of brick and concrete. The woodroom will be 32 feet by 52 feet, one story high, and will be built of brick and concrete, both departments to have reinforced floors. In connection with the construction of the mill, it will be necessary to build 2,250 feet of woodstay flume to take the water to the wheels from the end of the canal. The plant will be equipped with three grinders and will have a capacity of about 20 tons of pulp a day.

New Subsidiary of Fraser Companies

A new subsidiary of Fraser Companies, Limited, Fraser Paper, Limited, with an authorized capitalization of $1,000,000 and head offices at Plaster Rock, was granted a provincial incorporation by the New Brunswick Legislature last week. Archibald and Donald Fraser, and three officials of Fraser Companies, Limited, are the incorporators. This new company is the one which has commenced construction on a new paper mill at Madawaska, Maine, just across the St. John River, from Edmundston, N. B.

Forest Fires in New Brunswick

The worst forest fires which have ever been experienced in New Brunswick in the month of April have been reported during the past few days. There have been no fewer than six outbreaks, the two largest covering an area of approximately fifty acres, each occurring at Fredericton Junction, at the rear of the Canadian Pacific Railway farm, on Crown lands, and on Mersereay Brook, Sunbury county, also on Crown land. The largest outbreak on the

Tulique was located on an old cutting and burnt land near the Indian Reserve. Another fire was reported from Shogomoc, on private land.

Wayagamack Co. Financing Mill

The Wayagamack Pulp and Paper Company has this week announced the issue in Canada of $1,500,000 gold bonds of 6½ per cent, and of a five-year maturity. The company has also negotiated in London, through its subsidiary, the Wayagamack News Limited, and under authority of the British Trade Facilities Act, a loan of £425,000 which has been granted at the very favorable rate of 5 per cent. This financing is for the purpose of adding a 200-ton news print mill, and a 150-ton groundwood mill to the present kraft pulp and paper plant at Three Rivers, Que. Wayagamack Island, where the Company's mill is situated, has an area larger than necessary for the present needs of the company. There are certain portions of the Wayagamack Pulp and Paper Company's plant which are not utilized at present at their full capacity and which would be able to take care of much larger requirements. There is a series of overhead charges which are listed under the headings of administration, salaries of officials and staff, general expenses, general operating expenses, etc., which are not directly attributable to the manufacturing process. These can be applied to a greater tonnage and, as a result, a substantial reduction in the cost per ton of saleable product will be effected.

Another Barnjum Gift

A stand of Vancouver Island timber has been purchased by Frank J. Barnjum, of Montreal, to be preserved in a park as an example to posterity of the tall monarchs that existed in British Columbia before they were levelelled by the woodman's axe.

Greater Cost for News Print

Ellwood Wilson, Manager of the Forestry Department of the Laurentide Company, in an address in Montreal in connection with "Save the Forest" week, stated that greater costs for all forest products was the only way in which the Canadian forestry problem could be met. To have a sustained forestry yield in Canada, he said, the whole idea of logging operations must be changed to the extent that it will be necessary to spend from $3 to $10 an acre more when making new cuts. He particularly referred to the large consumption by newspapers and said that ultimately it would be necessary for buyers of news print to pay more for the product.

Development of Grand Falls

The New Brunswick Legislature held a session during the week to consider the report of H. G. Acres, of Toronto, on the development of power at Grand Falls which the Provincial Government has decided to go ahead with. This report reveals that it has been finally decided to use a pressure tunnel instead of an open waterway in harnessing the Falls. The initial plan will develop fifty to seventy-five thousand h.p., and provision will be made for the ultimate capacity at 150,000 h.p. Mr. Acres says that the Government may embark on the project with the assurance that the plant will be completed well within the limits of the total cost estimated by the engineers, which provides for the installation complete of 75,000 h.p. at $9,995,100, including riparian expenses. The net cost per h.p. on the high tension lines in Grand Falls will be $133.26.

Australian Trade Agreement

The reciprocal trade agreement between Canada and Australia comes up for ratification in the Canadian Parliament during the present session. Edward Beck, the Secretary of the Canadian Pulp and Paper Association, in a letter to the press strongly urging support for the agreement, says that owing to the preference which will be given in Canada to Australian dried and canned fruits and other products, American commercial interests are active in the making of public opinion against the agreement. Discussing the advantage which the agreement will be to the pulp and paper industry, he refers to the fact that Canadian paper will be placed on the same footing in the Australian market as paper from Great Britain.

New Power for Eddy Mill

A. J. Nesbitt and K. S. Barnes, president and secretary, respectively, of the Ottawa River Power Company, Limited, accompanied by a party of engineers, have just returned to Montreal from an inspection of the company's plant. Mr. Nesbitt stated that the new unit of 25,000 h.p. installed capacity has commenced operations and is delivering power to the Ottawa and Hull Power Company at Ottawa.

This plant has one unit installed of 25,000 h.p. capacity, but the dam, power house, etc., are all completed for an ultimate capacity of three units totalling 75,000 h.p. Practically the entire output of this unit is sold, and the company will commence delivering power on May 1 to the Ottawa Light, Heat and Power Company, and shortly thereafter to the new paper mill of the E. B. Eddy Company.

A Precedent in Timber Protection

A precedent of outstanding importance in connection with the conservation of forest areas has been established by the Quebec Government. In Northern Ontario many thousands of acres of valuable timber have been destroyed through mining operations and particularly through the lands being thrown open to prospectors. That the Quebec Government does not intend the experience to be duplicated in Quebec is shown by the following announcement in the Ottawa Journal:

"The Quebec Government is closing down on prospectors or gold speculators who plan going into the Cobb Lake district, about 15 miles from Chapleau, Que. In that section of Pontiac country a gold discovery is reported, but Government officials do not place much credence in the rumors and are more keen to preserve valuable tracts of pine and spruce. An order has been issued forbidding the public from entering the bush unless the individuals are armed with permits issued by the Forest Protective Association."

March News Print Statistics

Production of news print according to the News Print Service Bureau in the United States during March, 1925, amounted to 126,843 tons and shipments to 125,779 tons. Production in Canada amounted to 126,267 tons and shipments to 124,426 tons, making a total production of 253,110 tons and shipments of 250,205 tons. The news print mills also made 1,820 tons of hanging paper, 169 tons of which were made in Canada. Stocks of news print paper at United States mills totaled 26,414 tons at the end of March and at Canadian mills 21,892 tons, making a combined total of 48,306 tons which was equivalent to 4.5 days' average production. During March the United States mills operated at 87.4 per cent of capacity and the Canadian mills at 94.2 per cent.

Comparing production during the first three months of 1925 with same period of each of the five previous years the United States mills made about the same as in both 1924 and 1923, 15 per cent more than in 1922; 10 per cent more than in 1921 and 1 per cent less than in 1920; the Canadian mills produced 8 per cent more than in 1924, 22 per cent more than in 1923, 48 per cent more than in 1922, 82 per cent more than in 1921 and 70 per cent more than in 1920.

The combined production of the United States and Canadian mills in March, 1925, was 4 per cent more than in 1924, 9 per cent over 1923, 29 per cent over 1922, 37 per cent over 1921, and 25 per cent over 1920.

United Paperboard Co. Moves

CHICAGO, Ill., April 27, 1925.—The United Paperboard Company, Inc. has moved into their new office located in the Bell Building at 307 North Michigan avenue, Rooms number 823 and 824. The new telephone numbers are State 8592 and State 8617.

Many Changes Now in Progress at the Kalamazoo Mills

New Stock House of Kalamazoo Paper Co. Calls for Structural Engineering Feat—Bradford Paper Co. Now in Operation—Rex Paper Co. Makes Many Changes to Make Plant Attractive—Kalamazoo Branch of Kalbfleisch Corp. Busy—Mills Awaiting Large Clay Shipment.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., April 25, 1925.—A remarkable piece of structural engineering work is being done in the erection of the new stock house for the Kalamazoo Paper Company at mill No. 3. Built as it is on muck land, it has been necessary to take the greatest precaution to secure a solid foundation for the immense structure. Getting down to a solid gravel bed was the first problem and to do this it was required to sink no less than 578 concrete piles, varying in length from 13 to 32 feet 8 inches. On these piles were then erected 105 piers, each five feet square and as thick, supporting a like number of huge pillars, both piers and pillars being of the heaviest type of reinforced concrete construction.

That work has been accomplished and this week the H. L. Vanderhorst construction gang has laid the reinforced steel for the first floor and begun pouring the concrete flooring. Work on the second story will start before May 1, reinforced concrete being used for the entire five floors and basement. Now that the footings and piers are in the hardest problems have been overcome and the work will proceed much faster.

Power House Work Progresses

The work on the enlargement of the power house, a two story structure, is progressing rapidly. The lower floor will be used for extension of the pumping system. A Carey centifugal boiler feed pump has been installed, but is not yet connected up. On the second floor will be a 2,500 k.w. General Electric turbine, reinforcing two 500 k.w. turbines now installed. The foundation for the largest unit is now going on.

While the 168-inch Fourdrinier machine for mill No. 3 will not arrive before July 1, an immense amount of auxiliary equipment is on hand and will be installed as rapidly as possible. Three Norwood Engineering Company's rotaries and a like number of storage vats are in place, while in the filtration room are also six largest type Norwood filters ready for piping.

Michael Redmond, general superintendent, reports that these installations will be made as rapidly as possible, the desire being to have the enlarged mill in operation by January 1, 1926.

Bradford Plant Operating

The plant of the Bradford Paper Company in Fulford street is now in operation, making paper for the market. One of the large coating machines is running steadily. The second one should start in a fortnight, while two others are being installed. C. A. Bradford, president of the company, reports that the plant starts with a good run of orders on hand.

Within the past 45 days the work of disposing of stock and perfecting the organization has progressed rapidly. The subscribed capital has been increased from $200,000 to $250,000, practically all of which is subscribed. President Bradford says the additional funds thus secured will give the concern $100,000 working capital and obviate the necessity of arranging bank loans.

A. E. Hays has been engaged as superintendent. He is a well known papermaker, having been for five years with the Rex Paper Company in the coating department and previous to that with both the King Paper Company and the Monarch Paper Company.

Kalbfleisch Branch Busy

The Kalamazoo branch of the Kalbfleisch Corporation is busy, according to L. Reynolds Verdon, manager of the plant. Beginning operations about six to eight months ago the local plant is now shipping each day about two carloads of finished products. Satin white and rosin size are the commodities made here, the territory covered being particularly the Kalamazoo valley paper mills, also the balance of Michigan and other states in the Great Lakes territory.

"We are employing 30 hands now," said Mr. Verdon, "and are forced to operate at full capacity. Business is particularly good in the Kalamazoo valley, all the mills in this section having a fine run of business. Though operating only a little over half a year, we are already cramped for room. As we own seven acres of land, it will be easy for us to expand when necessary."

Rex Co. Improvements

Making an efficient mill attractive is the improvement program that has been inaugurated at the Rex Paper Company by Merrill B. King, president of the company. The land just east of the office structure is to be landscaped with a large grass plot and plantings of shrubs and roses. Included in this work will be the improvement of the property along the right of way of the Michigan Central railroad.

At the suggestion of William L. LaCrone, superintendent of Riverside cemetery, Mr. King is having a water lily pond installed in the center of the landscaped space. This will be fed by running water and covered by a pergola. These grounds, when improvements are completed, will be thrown open for the use of employees of the company.

Since July 1, 1924, the Rex Paper Company has expended approximately $70,000 in betterments. Included are items covering the erection of the new office building, additional equipment and machinery and extension of side trackage.

Awaiting Clay Arrival

Laden with clay for paper mills in the Kalamazoo valley, the steamship Agga is racing across the Atlantic ocean against a convoy of other vessels and hopes to arrive in Montreal Wednesday and win the honor of opening spring navigation on the St. Lawrence river. With this honor will go a gold headed cane, presented by the Mayor of Montreal to the captain of the victorious ship in the trans-Atlantic contest.

Arriving in Montreal, the Agga will proceed up the St. Lawrence, through Lake Ontario, the Welland canal, Lake Erie, Lake Huron and Lake Michigan to Michigan City, Ind. The cargo, consigned to W. E. Knight, American sales representative of the Consolidated Mines, Cornwall, England, will be unloaded and forwarded to mills in this city and neighborhood.

Mr. Knight also reports that the steamship Skulda is now loading at a port in Cornwall with the same material and should arrive at its Great Lakes destination not later than the first week in June. He is one of the real pioneers in the development of steamship transportation from the Great Lakes states to trans-Atlantic ports and return.

Kalamazoo News Notes

The Michigan Central railroad has installed two swinging gates to guard the roadway leading to mill No. 3 of the Kalamazoo Paper Company and the plant of the Hawthorne Paper Company.

Robert E. Staebler, treasurer and general manager of the Kalamazoo Paper Box Company, will attend the annual meeting of the United States Chamber of Commerce, which will be held in Washington, D. C., in May. He goes as delegate from the local chamber.

Felix Pagenstecher, president of the Bryant Paper Company, has been elected second vice president of the Michigan Manufacturers' Association.

F. M. Hodge, president of the Kalamazoo Paper Company, accompanied by Mrs. Hodge, returned Sunday, April 26, from a ten weeks' tour in the Mediterranean.

MATHIESON System

The Practical Usefulness of Engineering Vision

THREE years ago the Mathieson Company, unaided and with all its resources, undertook the development of a multiple unit tank car for the larger consumer of Liquid Chlorine—an achievement in Chlorine equipment originating in the broad vision and foresight of the Company's engineers and executives.

The scope of that engineering vision included not only the advantages of the ton container to the tank car user of Liquid Chlorine (who existed at that time only in the paper industry) and to the user of standard cylinder equipment, but also the adaptability of this car to consuming problems not then even recognized by other producers.

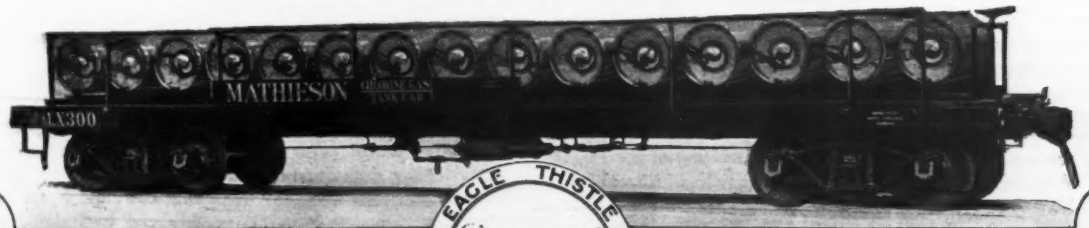
Now, in April of this year, the Department of Water Supply of the City of New York discontinued their consumption of Liquid Chlorine in cylinders at Ashokan and began chlorination from shipments received in the Mathieson Multi-Unit Tank Car—*the first municipality to adopt this economy.*

By July first of this year, six of the leading textile mills in the progressive Southern manufacturing field will be using this type of equipment for bleaching with Liquid Chlorine.

The story of the world search for Bromine and of the Dupont Company's equipment of the seagoing ship "Ethyl" with chlorination apparatus, is not complete without mention of the fact that she went to sea supplied with Liquid Chlorine in ton containers.

An organization that is conspicuous for such broad and practical vision is of service, first to its customers, and second to the consumer at large. The development of this convenient and economical Chlorine equipment has, in itself, made many new friends for the Mathieson Company; the problems of users of other industrial chemicals, in any field and in any quantity, are assured the same intelligent study and attention.

The MATHIESON ALKALI WORKS Inc.
250 PARK AVE. NEW YORK CITY
PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE



EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Caustic Soda - Liquid Chlorine
Bicarbonate of Soda
Anhydrous Ammonia
Soda Ash - Bleaching Powder
Modified Virginia Soda
Aqua Ammonia

Philadelphia Trade Sees Shadow of Duller Times

Attitude of Buyers Grows More Cautious as Time Advances—Hand-to-Mouth Buying Adds Greatly to Cost of Overhead—John A. Murphy to Visit Many Foreign Countries—Garrett-Buchanan Co. Reports Business on Gain—Restraint Order Returned Against Louis J. Kolb Co.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 27, 1925.—In its present mood the Philadelphia paper distribution trade as well as the manufacturing and converting branches show a tendency towards resting, with spasmodic spurts of activity of limited proportions in quantity of purchases. All along the line the trade has drifted into a listless condition with the attitude of heads of firms tending towards cautiousness both as buyers and in their outlook for the immediate future of the industry. With the Spring months' advancement there appears no appreciable increase in the business of the local industries upon which the paper dealers depend for the larger share of patronage, all of these enterprises which form the group of typical Quaker City industries now sharing in the duller times that seem to have temporarily overshadowed the improvement that was anticipated at this season.

High Cost of Overhead Disastrous

The outstanding factor that the trade has to contend with is the high cost of overhead in connection with hand-to-mouth buying. Dealers complain that where tonnage lots were the rule in former years at this season, there now are being placed orders for a few rolls at a time and only for immediate needs. Customers will allow their stocks to dwindle down to scanty supplies before reordering and then demand immediate and urgent deliveries. The dealers estimate that it costs just as much to deliver a few rolls as it does to deliver tonnage loads, taking into consideration the hire of employees, cost of gasoline, wear and tear on trucks and the time consumed in the hauling and all the incidentals necessary for the shipments of paper and its handling. As a result of the frequent calls on the delivery services because of this hand to mouth buying the business in both the fine and coarse paper divisions is done on a low margin of profit and in many cases at a loss. The problem of handling this small lot business is one that is difficult of solution and one of the heads of a large paper house sometime ago advocated co-operative hauling of the small orders from a central warehouse as a means of helping out in this phase of delivery service.

Prices Shading to Lower Quotations

Prices of the cheaper grades of paper stock have shaded to lower levels because of the slackened demand but high grades such as soft and hard shavings and ledger stocks have advanced. It is hard to secure the latter grades as warehouses have been cleaned out and difficulty is experienced in accumulating more to meet the mill requirements. Book stocks are listless and the lower grades that enter into the manufacture of boxboards have but little call from the manufacturers, now producing in limited quantities because of the dull times in the box industry.

Waste Merchants to Meet

Plans are now being made for the quarterly meeting of the Philadelphia Wholesale Waste Merchants Association which will be held on May 7 at the Hotel Majestic. Secretary William J. McGarity shortly will call a meeting of the Entertainment Committee to complete the details of the dinner and other entertainment which will be interspersed with the business sessions.

John A. Murphy to Sail for Europe

President John A. Murphy, head of the Daniel I. Murphy Company, Inc., 3rd and Brown streets, importers and wholesale dealers in paper stock and pulp, sailed for Europe on Monday of this week. He will travel over 13 foreign countries on a buying trip and for the purpose of extending the import business of his concern. The principal aim of the trip is to secure larger importations of rags and cotton waste. After a tour of Southern Europe he will go North taking in the pulp centers, arranging for importations to this country of mill supplies of pulpwood from the Scandinavian countries. While abroad President Murphy will visit the French General Electric Company headquarters in France. The Murphy Company recently became sole American distributors of the Fourdrinier wires manufactured by this company and it is for the purpose of arranging for larger importations of these wires that the visit to the French company will be made. The Murphy Company is disposing of large numbers of these Fourdrinier wires to the paper mills in this country.

Finds Business on the Gain

An evidence that the paper distribution business in this city and vicinity is on the gain is practically shown in the quarterly statement which the Garrett-Buchanan Company, 18 S. 6th street, has completed for report to the Federal Reserve Bank on paper conditions as they exist in this firm. The report shows that during January, February and March the Company's business increased generally on a monthly average of 9 per cent over the same period of last year. The company has extended its fine paper department and is now representing the Advertisers Paper Company of Holyoke, Mass., having added to its lines the Advertisers Covers.

Ward Co. Secures Blue Ribbon Exhibition

The exhibit which won the first award of the Blue Ribbon at the annual convention of the third and fourth Districts of the U.T.A. held in Wilmington last week has been added to the collection of the Graphic Arts Department of the D. L. Ward Company, 28 S. 6th street. The exhibit was that selected as representing the best speciments of the printer's art and was the work of Norman T. Munder, who is considered among the best printers in the country, with headquarters in Baltimore. This addition to the collection of the Ward Company, which now numbers more than 87 of the largest and most successful national advertisers in the country, will considerably increase the educational value of the Graphic Arts Department recently created.

Bantivoglio Co. Fire

Fire of unknown origin destroyed the building and stock of Bantivoglio and Sons, at 259 Division street, Camden. The firm is engaged in the wholesale paper stock business in Camden and is a member of the Philadelphia Wholesale Waste Merchants Association. The damage amounted to more than $10,000 including the building and the stocks of rags and paper.

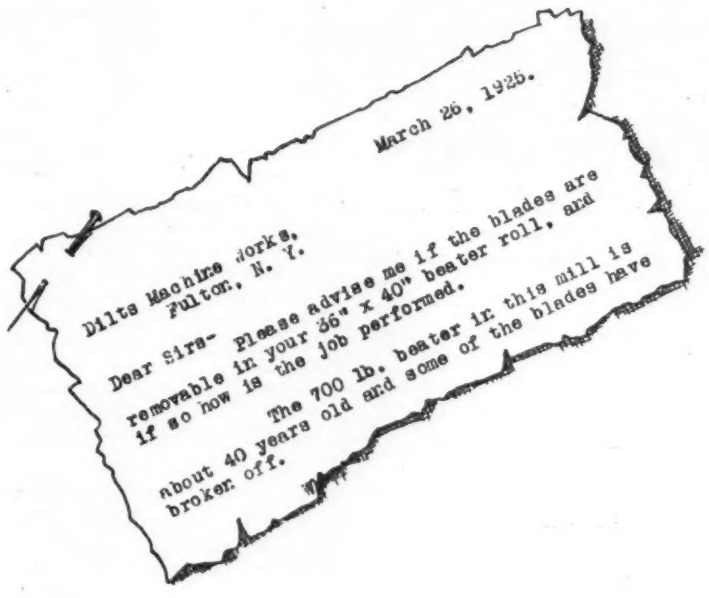
Kolb Co. Ordered Under Restraint

The State Road Factory of the Louis J. Kolb Company, which maunfactures waxed paper for bread wrappers, has been ordered to "straightway desist and refrain" from operating its machinery on Sunday and each week day between 7 P.M. and 7 A.M. according to a Court mandate handed down this week by Judge Audenreid of Common Pleas Court. The decision was the outcome of suit filed by the adjoining neighbors, Mr. and Mrs. M. Tobin, who testified that the vibration of the machinery in the plant shook their homes and interfered with their sleep and that the soot settled all over their home. An injunction was granted the complaintants in both the matter of soot and vibration, in the former the Court ordering the Kolb Company to install appliances to prevent ashes, soot and cinders falling on nearby homes.

Dilts

"YOUR PAPER IS MADE IN YOUR BEATERS"

Is This a Record?


March 26, 1925.
Dilts Machine Works,
Fulton, N. Y.
Dear Sirs- Please advise me if the blades are
removable in your 36" x 40" beater roll, and
if so how is the job performed.
The 700 lb. beater in this mill is
about 40 years old and some of the blades have
broken off.

After 40 years of service some Dilts fly bars do need replacing. The above letter recently came to us from a paper mill superintendent and we are wondering if any other superintendent can show us a longer record from our beating engines and fly bars.

Dilts beating engines have been built since the days "when Grant was running for President," and they have an honorable record. They have kept pace with the times. The most recent is the Dilts approved NEW TYPE beater which we know will interest every superintendent.

You should have *good* beater equipment. "Your paper is made in the beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Weakness in Fine Papers Developing in Chicago

Business in Coarse Division Rather Quiet at Present—Butler Paper Corp. to Move to New Quarters About May 1—Paper Industry Taking Lively Interest in Bowling—Champion Coated Paper Co. to Entertain Printing House Craftsmen—Paper Dealers Interested in Postal Rates

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., April 27, 1925.—In the fine paper division there are no price changes to note but a slight weakness seems to be developing in one quarter. It is reported that some of the mills making non-standard book papers appear to be out for tonnage and are shading prices to obtain it. Business in this division from a volume standpoint is not unsatisfactory but the net results leave something to be desired. A party, who is in position to know what he is talking about and also a keen student of conditions in the industry, repeated an observation made in these columns before to the effect that expenses, especially overhead, are out of line with gross profits. It is his opinion that there are too many mills and too many dealers. He believes that some of the smaller concerns, both in production and distribution, could be merged with the larger to the ultimate good of both parties to the transaction. He points out that the absorption of a small concern by a larger one would have little effect on labor as almost the entire personnel could be taken care of, but a lot of overhead, that enemy of profits, would be left out in the cold.

In the coarse division business is rather quiet. One prominent concern says that for the first time in years their sales chart shows two indifferent months in succession. March was not a good month and April is making a like showing. The sales manager of this company is very firm in the opinion that consumer stocks are the lowest they have been in years and that the month of May will find buyers in the market with good orders. If May produces a good volume of sales it will be another reversal of form as that is the month when the usual summer slump takes place.

New Butler Paper Quarters

The Butler Paper Corporation, which has had offices in the old Burlington Railroad building, 226 West Adams street, will move about May 1 to a new office in the J. W. Butler Paper Company building, 223 West Monroe street.

It will occupy the third floor of the Franklin and Monroe corner and will have approximately 9,000 square feet of office space, which has been remodeled and modernized up to the minute. The floor is lineolium covered and the ceiling paneled with Johns-Manville soundproof material. The treatment of floor and ceiling will give a practically noiseless office. The office will receive plenty of daylight from windows on two sides and, when artificial light is needed, it will be furnished by the latest indirect lighting fixtures.

A Lively Bowling Match

The Chicago paper industry has no regularly organized bowling league but teams from some of the dealers meet at times and do battle. Last fall the five-man team from the International Paper Company, 111 West Washington street, met a team from Pilcher-Hamilton Company, 340 North Dearborn street, and gave them a trimming.

Pilcher-Hamilton got a return game on April 13 which proved to be an unlucky day for International Paper. It was a three game match and the first game went to International by a margin of 88 pins. Pilcher-Hamilton took the next two games and the match. Before the match it was decided that total pins for the three games would decide the winner. International should have been sitting pretty with their lead of 88 pins in the first game but when the smoke of the last engagement had cleared away it was found that Pilcher-Hamilton had 2327 dead pins to their credit while International had only 2325, Pilcher-Hamilton winning the match by the proverbial "two pins." International Paper wants a return match and are likely to be accommodated.

The Champion Coated Paper Company will, on Saturday, May 9, play host at the mill at Hamilton, Ohio, to about 110 members of the Chicago Club of Printing House Craftsmen.

Champion Co. to Entertain

The Champion Coated Paper Company has provided a special train of five pullmans and three diners for the club. The party will leave Chicago Friday night, May 8, on the Baltimore and Ohio Railroad, and the train will be run direct to the mill. Meals, with the exception of Saturday night, will be served on the diners.

The Craftsmen will be accompanied on the trip by Bob Butterworth, of Champion's Chicago office, Champion's assistant traffic manager and the general advertising manager of the mill. Representatives of paper trade publications have also been invited to make the trip.

The train is due at the mill Saturday morning. The morning and early afternoon will be spent in showing the visiting Craftsmen the wonderful plant and whole-hearted skill of Champion workmen which combine to turn out Champion Coated Paper. After the mill has been visited the Craftsmen will be taken to the Butler County Country Club where dinner will be served. The craftsmen will devote the evening to holding a business meeting.

Champion Coated Paper Company has given similar parties to interested groups in the past, but this is the first time the trip has been made from Chicago.

Interested in Postal Rates

Chicago paper dealers have not been slow in waking up to the fact that the new postal rates have brought about a noticeable curtailment in paper consumption. Discontinued business has been in many cases traced directly to the new rates and a movement has been started here to form a national body which will collect the necessary data which will convince Washington that while the new rates may enable the post office department to make a slightly better revenue showing the effect on the paper industry as a whole will be bad.

A meeting was held last week and an account of what was accomplished and what is planned for the future will be made public later.

Resign from Paper Association

[FROM OUR REGULAR CORRESPONDENT.]

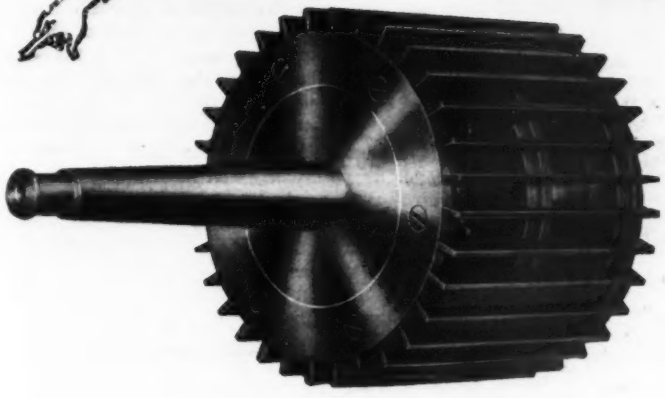
LOS ANGELES, April 20, 1925.—After a membership of less than thirty days, Nelson-Parr Inc., 1323 Palmetto street, have tendered their resignation as members of the Los Angeles Paper Trade Association.

The reason for the resignation could not be learned. Members refused to comment and J. R. Coffman, secretary, declared he had nothing to say. William Parr, president of the corporation, confirmed the report that his company had withdrawn. "We have tendered our resignation," he said, "but it has not been acted upon as yet."

A list of the members given out at Mr. Coffman's office did not number the Nelson-Parr Company among them. The informant stated that this firm was not given out because its exact status was not known. The resignation was submitted Thursday, April 16.

The Sierra Paper Company, which tendered its resignation some weeks ago, and later withdrew it, are still members.

The men in the beater room are always glad to see Valley Holland Beaters and Valley Bandless Rolls installed. When the Bandless roll comes in, one of the most unpleasant jobs in the beater room goes out.



Save Time *and* Labor in the Beater Room

There are very definite reasons why Valley Holland Beaters save time and labor in the beater room, are more efficient and produce better paper at a lower cost.

One of the main reasons is the Famous Valley Bandless Roll, a feature of every beater produced in our plant. It is so constructed that any or all of the bars may be removed without taking the roll from the tub. The time and labor of filling is reduced over 50%. The construction of these rolls is such that the bars never work loose. Valley Bandless Rolls are accessible, durable, safe, and save an enormous amount of time. Write today for a booklet describing fully Valley Holland Beaters and Valley Bandless Rolls.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

Importance of Export Business to the Paper Trade

The weekly luncheon meeting of the Salesmen's Association on Monday was one of unusual interest due to the fact that a special speaker had been arranged for in the person of John Matthews, Jr., Assistant Director of the Bureau of Foreign and Domestic Commerce, who spoke on "Export Business and Its Importance to The Paper Industry."

Mr. Matthews had a good audience and, after his talk, answered numerous questions which were put to him. His address in part follows:—

Selling Export Trade Idea

"I have been in the paper industry for a number of years and from my knowledge of that industry it seems to me that the

JOHN MATTHEWS, JR.

Bureau of Foreign and Domestic Commerce has a twofold job; first, to sell the idea of export trade to the industry, and secondly, having done this to assist in developing that trade.

"In connection with the first point let me ask 'What does export trade mean to the paper industry and what are its advantages?' It seems to me that your industry today is faced with the problem of disposing of a surplus in production. In other words, the demand in the home market is not sufficient to absorb the production of the industry running at full capacity. The paper industry, unlike many other major industries, requires very heavy investment of capital which entails a high overhead expense and, in view of this, unless a mill can run continuously pretty close to capacity it is difficult to make a profit. You are therefore all striving to run to capacity.

"There are two ways of taking up this slack between demand and capacity. One of these is to find new uses for paper and new types to meet such uses. The other way is to take advantage of export trade. In the first method you have the natural resistance to change, and even in this country where new ideas move much more rapidly than in any other country of the world, it is at best a slow process and while new uses for paper will be developed and the industry adjusted to meet these new uses, this method cannot be looked upon as an immediate means for solving your problems. On the other hand, the export business offers an immediate potential market for your present products. Some will say that this is not so because the foreign countries always want something different to what we are in the habit of using in this country. That may be true in so far as size and weight is concerned, but there are practically no countries in the world using paper which cannot be made in the United States. So after all, aside from slight differences in size and weight, there is very little difference between doing business in this country and abroad.

Fear of Inability to Compete

"The next objection raised by those doubtful of the advantages of an export trade is that we cannot compete wtih European producers. Such an objection is not peculiar to the paper trade—we hear it from all sides, but when you get right down to facts we are, in spite of this competition, increasing our export trade.

"The opinion that foreign competition abroad is impossible to meet on a price basis, very probably results from the experiences of American manufacturers during 1921 and 1922 when the paper producing countries of Europe resumed operation after several years of idleness without a proper knowledge of the effect of increased prive levels throughout the world. This condition was only temporary however and the workmen, suppliers of raw materials, and mill owners quickly learned the necessity of increased compensation to meet new conditions. As a result prices advanced and are still advancing, and with their industrial recovery these producing countries are consuming increased quantities of their products locally. The changes that have occurred during the past two years have been of such importance that manufacturers should again investigate the possibilities for the sale of their particular commodities in foreign markets under conditions as they are today.

Salesmen in Position to Help

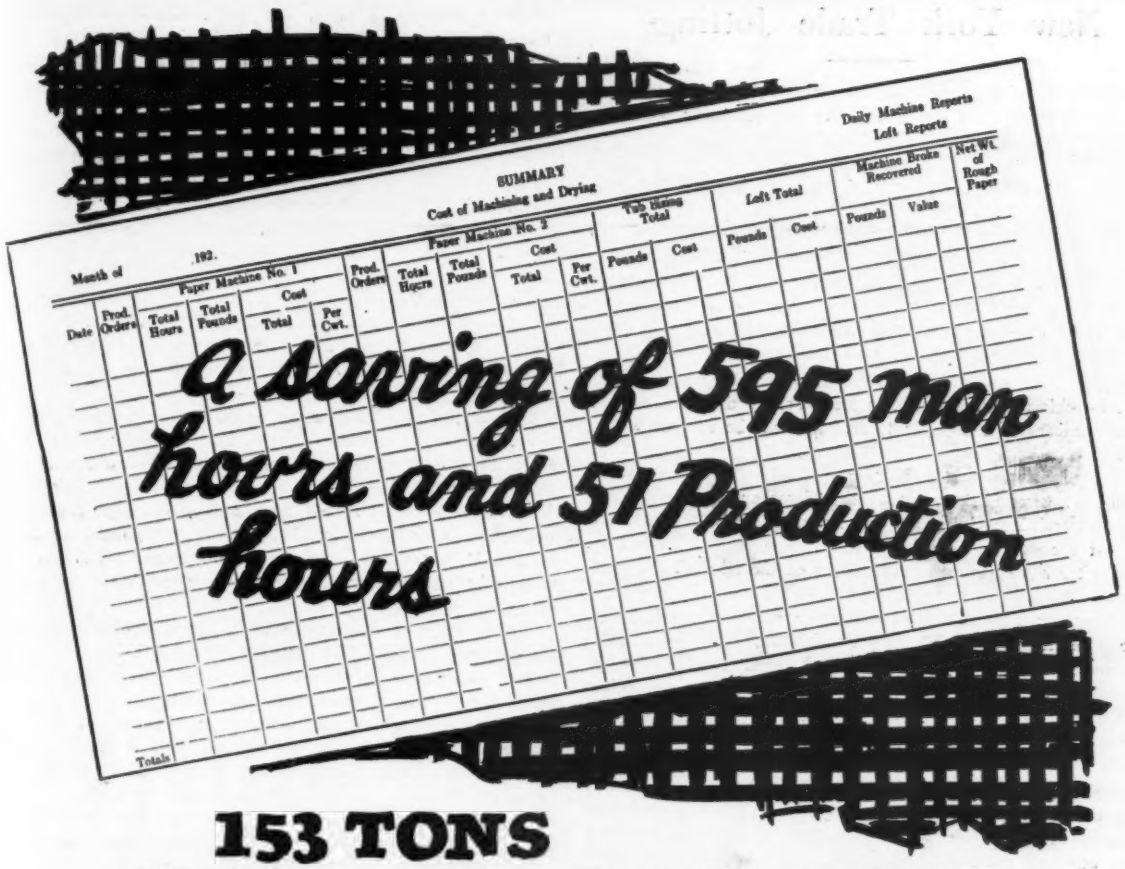
"As a group, you are particularly well situated to sell the advantages of an export trade to the various industries and few will benefit as directly from increased exports in general as yourselves through the increased demand for the numerous grades of paper and paper board containers used in shipping abroad the majority of articles that move in export trade. There is no manner of computing what proportion of the total domestic consumption is so used, but with a total exportation valued at more than four billion dollars annually, there can be no question of its importance.

"As a definite example just take the export of printed material alone, the value of which during recent years has amounted to somewhere between fifteen and twenty million dollars annually, involving the use of more than 20,000 tons of paper a year. If the producers of this kind of material were to adopt such an attitude, it would mean that loss of tonnage to your mills.

"What does our direct export trade in paper mean to your industry? We are shipping abroad now at the rate of about 150,000 tons per year, valued at approximately twenty-five million dollars. This does not include the printed matter mentioned above, which if added, would give us a volume of 175,000 tons valued at about forty-three million dollars. It seems to me that this is business certainly worth having, but unfortunately it is not enough to make very much of an impression if it comes to disposing of surplus production, for it represents only about 2 per cent of your annual production.

"This talk has developed into a kind of sermon, and I have not yet told you about what the Department of Commerce does in connection with the promotion of export trade. First of all let me tell you that the Bureau of Foreign and Domestic Commerce has forty branch offices in the principal foreign countries of the world through which, together with the assistance of about 500 consular offices, we are daily in touch with conditions in every world market. The work of these field men is directed mainly through a division in Washington representing each of the major industries in this country, one of which is the Paper Division. This division secures through this field staff timely information on likely markets, demand in those markets, methods of distribution, local customs and

(*Continued on page* 34)



153 TONS INCREASED PRODUCTION

THE daily machine reports in Mills No. 1 and 2 of a certain mill utilizing the NEW BELOIT FOURDRINIER show a saving of 595 man hours and 51 production hours, with a direct increase in production, attributable to these factors, of 153 tons per machine, over a period of twelve months. This saving was in wire changes alone. Similar benefits, hardly possible to compute with accuracy, were shown in the saving in time of various operations and the increase in production through steady, uninterrupted performance.

Pressing a button starts the mechanism operating smoothly and efficiently. There are no rolls nor suction boxes to remove. Heavy lifting is eliminated. Possible injuries to wire are minimized. And the results attained are remarkable. Tests of 60.4 points on a 60-pound sulphite sheet; a 15% increase in production; 36 to 44% more than the usual "point-to-the-pound" on Kraft. Proof in abundance is at hand to prove that the NEW BELOIT is making paper-making history.

Your cost sheets will tell a different story, once you have the NEW BELOIT producing for you. It will pay you to investigate.

Send for Bulletin No. 9 for further facts.

The NEW BELOIT FOURDRINIER

Beloit Iron Works — **Established**

BELOIT IRON WORKS BELOIT WIS

Beloit, Wis., U.S.A. — **Since 1858**

New York Trade Jottings

Louis Michel of the Donnacona Paper Company, Ltd., spent several days in New York last week. He was returning home from a trip to Washington.

* * *

John Stadler, managing director of the Newfoundland Power and Paper Company, Ltd., at Cornerbrook has been a visitor in New York for several days.

* * *

Katzenstein and Keene, Inc., announce that they have moved their offices from 50 Church street to 46 Harrison street, Hoboken, N. J. Their telephone number is Hoboken 9420.

* * *

Harry K. Sorensen, Commercial Attache of the American Legation at Copenhagen, has arrived in New York and has called upon several members of the paper trade. He will be in this country several months.

* * *

Frank W. Clarke, President of the Canadian Pulp and Paper Association and The Gulf Pulp and Paper Company, according to word just received in New York, left France April 18 direct for Quebec, after having spent several weeks on the Riviera.

* * *

Workmen are busy this week making the changes at the offices of the American Paper and Pulp Association, 18 E. 41st street, which were referred to in last week's PAPER TRADE JOURNAL. When the transformation has been completed the executive offices will be located in the front of the building, a more favorable location than they now occupy.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, had a most enjoyable time last week in Quebec where he delivered three talks in connection with "Save The Forest" week. Mr. Kellogg was well entertained in Quebec, the Garrison Club being among his special entertainers. Before his return home he visited the Three Rivers plant of the International.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, will broadcast from WEAF this afternoon, speaking on "Our Forests," as a feature of "Forest Protection Week." In concluding his talk he said:—"The problem of forestry in this country is educational and economic. There must be a public sentiment which will no longer permit forest fires and a recognition of the peculiar characteristics of the forest crop, so that it shall not be taxed to death before it is ready to harvest. We also need more publicly owned forests upon which there may be grown the larger sizes and older classes of timber which will not be produced in sufficient quantity by private enterprise. On the other hand, increasing timber values will make the growing of timber crops of certain kinds an attractive investment in favorable localities, while these same increasing values will bring about more economic usage of timber, so that eventually a balance will be established between production and consumption."

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., April 29, 1925.—The Government Printing Office has received the following bids for 38,500 pounds of high grade rag laid antique finish book paper, 24 x 38—77: Reese and Reese, 9 cents per pound, 9.75 cents, 10.25 cents, 11.25 cents, 12.75 cents; and American Writing Paper Company, 15 cents; Barton, Duer & Koch Paper Company, 12.7 cents; R. P. Andrews Paper Company, 9 cents, 11.15 cents, 13.25 cents, 18 cents and 26 cents; Barton, Hobart Paper Company, 14.75 cents and 16.75 cents; Paper Manufacturers Educational Association, Inc., 26.5 cents; Mathers Lamm Paper Company, 15 cents, 15.9 cents, 17.8 cents, 17.4 cents, 19 cents; Lindemeyr and Harker, 10.45 cents and 12.9 cents; Worthy Paper Company Association, 19 cents; Samuel S. Alcorn, 9.75 cents, 10.75 cents; Whitaker Paper Company, 12.67 cents.

The Government Printing Office also received the following bids for 6,100 pounds of white bond paper, 17 x 28—30½, No. 24, Aetna Paper Company, 16.48 cents per pound; R. P. Andrews Paper Company, 23 cents; American Writing Paper Company, 18 cents; Barton, Duer and Koch Paper Company, 15.9 cents; Old Dominion Paper Company, 16.24 cents; Maurice O'Meara Company, 19 cents; Dobler & Mudge, 16.25 cents; Reese and Reese, 18.5 cents; Barton, Hobart Paper Company, 18 cents.

Bids on 9,600 pounds of white double coated book paper, 38 x 48—192, were received as follows: Old Dominion Paper Company, 13.99 cents; Allied Paper Company, 13 cents; Whitaker Paper Company, 13.57 cents. Also on 6,000 pounds of white M.F. book paper, 31½ x 45½, the following were received: American Writing Paper Company, 12.86 cents; Barton, Duer & Koch Paper Company, 11.5 cents; Lindemeyr & Harker, 11 cents; Reese & Reese, 15.75 cents; Old Dominion Paper Company, 10.83 cents.

The Government Printing Office has received the following bids for 300 reams of 8 x 10½ pink laid mimeograph paper: R. P. Andrews Paper Company, 15.34 cents per pound; Dobler and Mudge, 11 cents; Old Dominion Paper Company, 9.35 cents; Garrett-Buchanan Company, 13.1 cents and Hano-Weinkrantz Company, 12 cents.

The Government Printing Office has received the following bids for 1,810 pounds of 22½ x 28½—181, white index bristol board: Carew Manufacturing Company, 26 cents; Carter Rice and Company, 30 cents and 20 cents; American Writing Paper Company, 25 cents; Old Dominion Paper Company, 18.49 cents and 28.98 cents; Maurice O'Meara Company, 29.5 cents; Dobler & Mudge, 28 cents; Barton-Hobart Paper Company, 18.78 cents; and Hano-Weinkrantz Company, 26 cents.

The Printing Office will receive bids on May first for 9,450 pounds (300 reams) of 24 x 38, 31½—No. 13 white bond paper.

The Government Printing Office will receive bids on May 1st for 1,940 pounds of 22 x 28—194, red carboard.

IMPORTANCE OF EXPORT TRADE

(*Continued from page 32*)

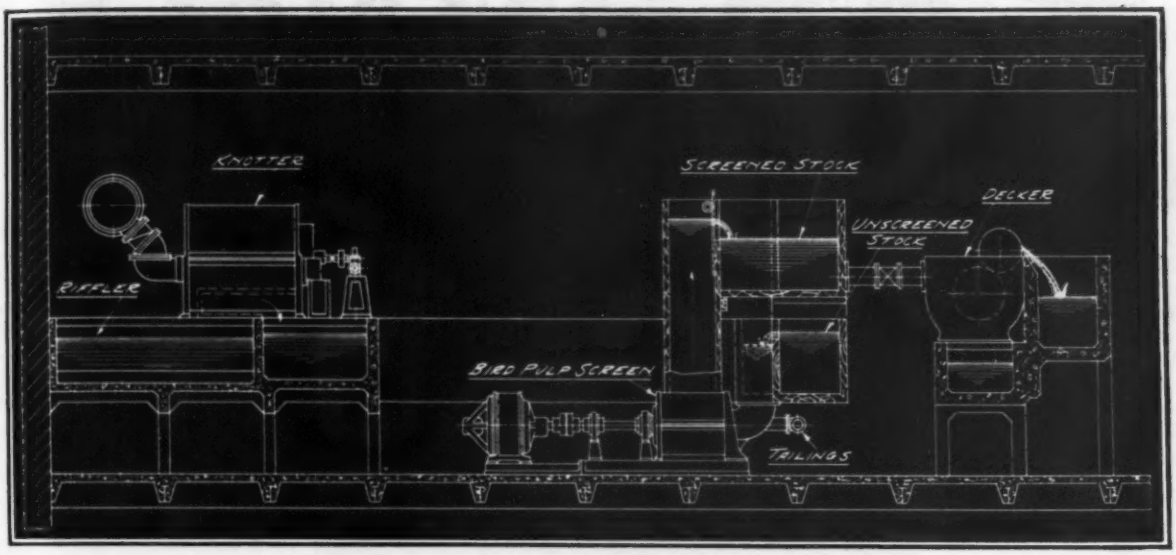
requirements, foreign competition, including information on grades and prices, terms of credit, etc. In addition to this we have our regional divisions through which general economic information on any country may be obtained; the Division of Commercial Laws which is equipped to give counsel in regard to drawing up agency contracts and contracts of sale, as well as assistance in settlement of disputes; the Commercial Intelligence Division, through which lists of prospective customers and agents, together with reports on such agents and customers, may be obtained; the Transportation Division to advise on packing and shipping; and a Foreign Tariffs Division through which all up to date information in regard to customs duties and customhouse regulations may be secured. In other words, we have there in the Bureau a complete organization through which we can render assistance on any problem in connection with foreign trade which may arise. The services of this entire organization are at your disposal. The Paper Division is your division in the Department of Commerce, and we want you to use it."

New Room for Paper Trade Association

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., April 27, 1925.—The western office of the National Paper Trade Association, which has been located in Room 1912, Conway Building, Chicago, has been moved to Room 1448 in the same building.

Screening Pulp On One Floor Level



Your Screen Room can look like this

Circulation by gravity, with knotters, screens, deckers, or wet machines, and tailings screens *on one floor*—when you're equipped with Bird Pulp Screens.

The Bird Pulp Screen is as good for pulp as the Bird Screen is for paper.

You can save quantities of power by using Bird Pulp Screens.

Instead of a loss of head amounting to 4 to 7 feet when using old type screens, this new screen actually lifts the stock from 6 to 10 feet. It not only screens but it pumps. All pumps used for screened stock or tailings are eliminated. The power saving alone quickly pays for a Bird Pulp Screen installation.

Considering the many additional advantages of the Bird Pulp Screen—production of cleaner, stronger stock — greatly increased capacity—extreme flexibility—saving in floor space—can you afford to deprive your mill of this great saving in power?

Ask for a copy of the Bird Pulp Screen Catalog. You'll find it interesting.

BIRD MACHINE COMPANY

South Walpole Massachusetts

7770

Western Representative
T. H. Savery, Jr., 1524 Republic Bldg.
Chicago, Ill.

BIRD MACHINERY

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Limited
260 St. James Street
Montreal, Canada

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Tacoma, Wash.—The Cascade Paper Company, West Tacoma street, is said to be perfecting plans for the construction of a new addition, comprising a main mill unit, with auxiliary structures, estimated to cost close to $400,000, including equipment.

Ontonagon, Mich.—The Northern Fibre Company has plans under way for the construction of a new addition, to be two-story, equipped primarily for the production of heavy box paper. The cost is reported in excess of $40,000.

Chillicothe, Ohio.—In addition to expansion now under way, the Mead Pulp and Paper Company is considering preliminary plans for the construction of two new one-story additions, 70 x 70 feet and 50 x 50 feet respectively, to be located at Paint and Ninth streets. The structures will be used for storage and distributing service and are estimated to cost close to $50,000. J. H. Rhodes is company engineer.

Jersey City, N. J.—The Dalton-Tumulty Company, Inc., 42 Liberty avenue, manufacturer of paper boxes and containers, has plans under way for the construction of a new addition to its plant, four-story, 72 x 76 feet, estimated to cost close to $75,000, including equipment. It is expected to ask bids on general contract at an early date. R. W. Sailor, 76 Montgomery street, Jersey City, is architect.

Richmond, Va.—The Albermarle Paper Manufacturing Company, Tredegar street, has authorized plans for the construction of a new four-story plant, estimated to cost close to $200,000. The structure will replace a portion of the works destroyed by fire a number of weeks ago. It is proposed to install considerable new machinery. B. W. Cole is treasurer.

Woronoco, Mass.—The Strathmore Paper Company has revised plans under way for the construction of a new addition to its plant to be used for general warehouse and distributing service. It will be four-story, reinforced-concrete, 42 x 200 feet, estimated to cost in excess of $75,000. Lyman Howes is company engineer.

Montesano, Wash.—The Grays Harbor Pulp and Paper Company, Seattle, Wash., D. P. Boles, manager, is considering plans for the construction of a new mill on the Wynoocke River near Montesano. It will consist of several operating units with power house, machine shop and auxiliary structures. The reported cost is placed at $500,000. It is proposed to begin work during May.

San Francisco, Cal.—The National Paper Products Company, 1789 Montgomery street, is completing plans and will soon begin work on a new one-story addition to its plant, to be located at the rear of existing structures. It will be used for warehouse and distributing service. Samuel Lightner Hyman, 68 Post street, San Francisco, is architect.

Fulton, N. Y.—The Oswego Falls Corporation, manufacturer of paper containers and kindred specialties, has work in progress on two new additions, one and two-story, 82 x 200 feet, and 82 x 120 feet, expected to cost more than $100,000. The H. K. Ferguson Company, Cleveland, Ohio, is the general contractor.

Baltimore, Ohio.—The Fairfield Paper Company has work in progress on a new addition to its plant estimated to cost close to $50,000, and purposes to have the structure ready for equipment installation at an early date.

Philadelphia, Pa.—David Weber & Co., Fifth and Locust streets, manufacturers of paper boxes, containers, etc., have awarded a general building contract to the Robins Contracting Company, 1137 North Front street, for the contruction of their proposed new plant, on site lately acquired at Tioga and Richmond streets. It is estimated to cost about $190,000, with equipment. The Ballinger Company, Twelfth and Chestnut streets, is architect and engineer.

Kagawong, Ont.—The Little Rapids Pulp Company has awarded a general contract to W. E. Ule, Stevens Point, Wis., for the construction of its proposed local pulp mill, with hydroelectric power plant and miscellaneous building, estimated to cost close to $200,000, including equipment. Headquarters at Kaukauna, Wis.

St. Joseph D'Alma, P. Q.—Price Brothers Ltd., is proceeding with work on its new local paper mill, comprising a number of one-story units, with laboratory, power plant and other structures, and plans for the early installation of machinery. It is reported to cost in excess of $1,750,000. The general contract is being carried out by William I. Bishop, Ltd., Montreal.

Toronto, Ont.—The Dominion Envelope and Carton Company, Ltd., 150 Duchess street, has completed plans and will proceed with the construction of a new addition to its plant, to be three-story and basement, reinforced-concrete, estimated to cost $160,000. The general contract has been let to the Toms Contracting Co., 47 Duggan avenue.

Toronto, Ont.—The Radcliffe Paper Company has acquired property at 90 York street, and will use for general operation and expansion.

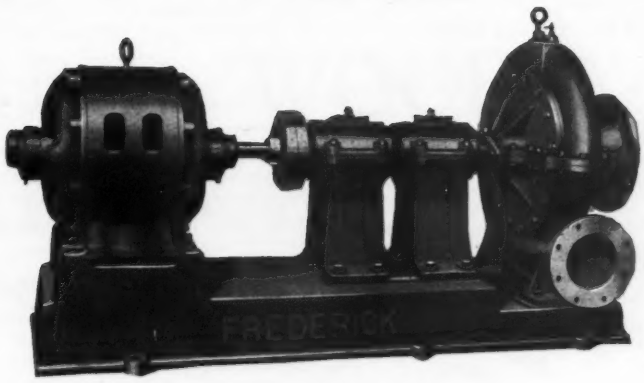
Limoilou, Que.—The Anglo-Canadian Pulp Mills, Quebec, are reported to be planning for the construction of a new pulp mill at the mouth of the St. Charles River, near this place, with estimated cost place in excess of $450,000.

Mexico.—Blas Ruiz Sucs., P. O. Box No. 11, Colima, Mexico, has addressed an inquiry to the Philadelphia Commercial Museum, Philadelphia, Pa., advising that they are desirous of receiving information regarding paper-making machinery and straw machinery from American manufacturers. Correspondence is requested in Spanish.

New Companies

Baltimore, Md.—The United Paper Company, 101 Dover street, has been incorporated with a capital of $2,500 and 500 shares of common stock, no par value, to manufacture and deal in paper products. The incorporators are W. A. Duvall,

FREDERICK PUMPS



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Jr., W. Wallace Rynhart, Jr., and Edward E. Hargest, all of Baltimore.

Dover, Del.—The Pulp and Wood Products Corporation, care of the United States Corporation Company, Dover, representative, has been incorporated with a capital $1,000,000, to manufacture pulp products.

Perth Amboy, N. J.—The Samuel Baum Company has been incorporated with capital of $100,000, to manufacture and deal in paper products. The incorporators are Joseph, Samuel and Abraham I. Baum. The company is represented by Karkus & Karkus, 224 Smith street, Perth Amboy.

Monroe, Mich.—The Michigan Board and Paper Company has been incorporated with a capital of $25,000, to manufacture paper board, cardboard, etc. The incorporators are J. D. Miller, George B. Wright and Sterling O. Dusseau, 417 North Macomb street, Monroe.

SUPERINTENDENTS ORGANIZE

(*Continued from page 23*)

eratives can only be achieved through frank and honest co-operation with the human instinct of justice and fellowship predominating," said Mr. Ellerson. "The best head of a department, executive or administrative, may be obtained from the men who have gone through the mill themselves and served their apprenticeship. A successful man is the one, in most cases, who knows his business, and therefore the man who has grown up in it, without theory, but with practice, will prove the most valuable to not only himself, but the business, too.

"Character is the prime essential. Men with character, working together, can accomplish much. An ideal head should have served his apprenticeship and gone through the entire course in a practical way."

Mr. Saville showed that the South, with its natural advantages, is fast coming into its own, which is that of supplying the world with manufactured goods, grown on the spot, turned into the product, with home-loving and loyal labor, with accessible markets, through unsurpassed transportation facilities, and weather conditions not equalled anywhere on earth.

"We have the labor, the first thing to be considered. We have no labor troubles, because our working men are to the manner born, and are of the same line of thought and endeavor as those who conduct the businesses; we have the mines, the fields, the forests, the transportation, the climate, the homes, the peace and happiness that is hard to find elsewhere, and we have an Anglo-Saxon race of more than 90 per cent of our population. All these things combined must appeal to the man who is looking for a place to locate his plant."

L. D. Post of New York, pointed to the dangers of foreign competition, and declared that from his personal observation he was satisfied that within a decade the South would be the center of the manufacturing industry, particularly the paper manufacturing business of the United States. He warned the manufacturers not to go into unwarranted expansion. Let the supply meet the demand, but do not overproduce, he warned. He praised the promoters of the new association and declared that such a group represented the clearing house of the business with its prime object, one of eliminating waste and unnecessary energy.

Resolutions of Thanks

Carl Magnus, chairman of the committee on arrangements, presented a series of resolutions thanking those who contributed toward the success of the convention, and presented Allen J. Saville a meerschaum pipe, and Mr. Post a fountain pen, as appreciation of their efforts in the success of the meeting.

R. L. Eminger, chairman of the organization committee, of the Miamisburg Paper Company, Miamisburg, Ohio, felicitated the membership, and expressed his pleasure at being able to take part in the organization meeting.

Boston Trade More Optimistic

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., April 27, 1925.—The paper trade here took on a more optimistic outlook this past week with inquiries and orders coming into the various houses in fairly good quantity. Gradually there seems to be a tendency to get away from hand-to-mouth buying, however there is much room for improvement in the manner of placing orders. But with Spring comes new business and Boston houses have not been altogether forgotten.

There is no boom. Business is just coming along gradually. It is a case of constantly going out after it. One general complaint, or a subject that causes much comment, is "over-caution" and "holding off" for a price break. Merchants say this attitude has a decided reactionary result on business.

Just now the fine grades division is enjoying very good business, demands from the printers coming in steadily. Those doing book work, house organ and direct mail specialties are being kept busy. In the coarse paper division, box board and card board business is only fair.

By way of comparison, however, some of the houses report better business than they had a year ago at this time. There is noticeable a generous increase in the sale of advanced orders for greetings and high grade engraving papers. Waxed papers and tissues are in demand while rag stock continues to be scarce and prices remain up. Quiet times in the clothing and textile trade are given as reasons for the quiet tone in the rags section.

H. S. Brown, Sales Manager

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., April 28, 1925.—An event that caused much comment in paper trade circles here this week was the appointment of Herbert S. Brown as sales manager for Carter Rice & Co. Corporation. Mr. Brown's elevation comes as a reward for meritorious service, he having been a member of the sales force for 25 years. His promotion brought to him messages of congratulation from all parts of the country.

Announcement of the promotion was made at a meeting of the Carter Rice sales force held here this week and was made by Hubert L. Carter, treasurer and general manager of the firm.

Mr. Brown has been outside man for the house since he joined the force in 1900. He has travelled chiefly in western Massachusetts and in New York state,

One of the outstanding features of the sales force meeting was the spirit of co-operation evidenced by the entire staff, each man pledging 100 per cent support to their new "chief" and Mr. Brown in return pledging the same to the house.

Among those present at the conference were: Hubert L. Carter, treasurer and general manager; George H. Lowe, president; John C. Kennedy, secretary; Charles A. Young, F. W. Power, W. J. McLellan, E. A. Crowell, A. E. Pratt and C. H. Beckwith.

A Correction

In the advertisement of the St. Regis Paper Company which appeared in last week's issue of the PAPER TRADE JOURNAL, the address was wrongly given. The offices of the company are located at 30 East 42nd street, New York, where they have been located for several years and not at 49 Wall street, which was given in the advertisement.

Malone Paper Co. to Expand

[FROM OUR REGULAR CORRESPONDENT.]

MALONE, N. Y., April 28, 1925.—The Malone Paper Company has awarded the contract for the prepared addition to its mill here to the E. K. Fenno construction Company of Syracuse, N. Y. The cost of the proposed improvement will be about $100,000.

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Member A. B. C. Audit Bureau of Circulations

Vol. LXXX New York, April 30, 1925 No. 18

BETTER OUTLOOK FOR INDUSTRY

A survey of the business conditions conducted by the National Association of Manufacturers shows business and industry now and for the summer to be on a healthy basis. The survey reflects the actual business and prospects for the summer, as shown in reports from business and industrial executives from all over the country. The analysis was made, not by economists or others with theories, but by practical business men using only the definite reports.

Immediate business and prospects for this coming summer, according to the report are healthier and on a more stable basis than they have been since the close of the war.

Stability has supplanted hysteria and indecision. Production is at a healthy flow, wages are high, employment is on the increase, competition is keen, consumers' prices are lower, and price variations are less severe than a year ago. This condition will prevail for the next few months at least. The country is now going through a purchasing era, not of boom proportions, but of steady persistence that gives basis for unusual confidence.

Compared with a year ago, 51 per cent of the reporting industries find the volume of business higher, some of these recording an increase as large as 100 per cent; 30 per cent report that the volume of business remains the same. In about 19 per cent of the industries it has shown a sluggishness or a general falling off. Better buying has enabled some manufacturers to reduce wholesale prices as much as 10 per cent while many others have made cuts of from 2 to 8 per cent.

For the immediate summer the prospects are bright or stable in 93 per cent of the industries—in detail, 8 per cent of them report summer prospects as excellent, 47 per cent report them as good, 38 per cent class them as fair, and only 7 per cent have misgivings for the usually slack period.

This favorable condition has been brought about by a more natural leveling of production to demand, with some caution against overstocking, and to some appreciable degree by the reductions in personal taxes, which have released millions of dollars for the purchase of near luxuries and even necessities that had been foregone by hundreds of thousands of persons in order to meet their tax obligations. It is true that in some sections local taxes have almost offset the Federal reduction, but the general advantage has been strongly noticeable.

In instances tax reductions have permitted extensions, some of these through investment by employees in company stock, while other industries report that lower taxes produced excellent "Easter money."

Perhaps the healthiest reflection in the survey is found in the employment and wage situation. Far from any prospects of great unemployment this summer, as some panicky economists have forecast, the great bulk of the industries are running with the throttle well open and will continue to do so through the summer.

Specifically, 25 per cent of the reporting industries already have made plans to increase their forces this summer; 63 per cent will operate with their present ample forces. Only 12 per cent are making reductions, and these are mostly seasonal. And, on this same sound footing, 22 per cent of these plants have increased their wages over last year; 70 per cent will continue on the present high wage basis and only 8 per cent are making reductions.

This survey, which is the annual spring analysis made by the National Association of Manufacturers, covers the gamut of every kind of basic industry in the country and hundreds of allied branch industries.

For the sake of simplification the replies are divided into twenty-two classifications, including automobiles, automobile accessories, building and building supplies, cement and clay products, chemicals, oils and drugs, clothing, electrical, food and food products, furniture, glass, iron and steel, jewelry, leather, lumber, machinery, metals, paper and pulp, rubber, stationery and printing, tools and hardware, textiles and miscellaneous.

These replies represent a cross section of the business of the country and more important still are the individual reports from the executives of the great and small manufacturing establishments who employ millions of workers and who are in immediate touch with the present and future situation.

EMPLOYMENT IN THE PAPER INDUSTRY

March employment figures in the paper and pulp industries just been made public by the Bureau of Labor Statistics of the Department of Labor at Washington, D. C., show a rather more encouraging condition than has existed recently.

Two hundred paper and pulp plants reported their employment in February at 52,216, increasing in March to 53,563, an increase of 2.4 per cent. The payrolls in these plants also increased from $1,402,667 in February to $1,434,821 in March, an increase of 2.3 per cent.

Replies were also received from 153 paper box factories which gave their employment in February at 16,449, decreasing in March to 16,211, a decrease of 1.4 per cent. The payrolls in these plants on the other hand increased from $351,164 in February to $355,405 in March, an increase of 1.2 per cent.

The Bureau received replies also from 141 paper and pulp plants which gave their employment in March of last year at 43,645, increasing in the same month of this year to 44,728, an increase of

2.5 per cent. The payrolls in these plants also increased from $1,183,288 in March of last year to $1,197,613 in the same month of this year, an increase of 1.2 per cent.

One hundred and forty-seven paper box factories reported their employment in March of last year at 15,492, decreasing in the same month of this year to 14,841, a decrease of 4.2 per cent. The payrolls in these plants also decreased from 329,693 in March of last year to $319,244 in the same month of this year, a decrease of 3.2 per cent.

Union Makes New Wage Agreements

ALBANY, N. Y., April 27, 1925.—Negotiation of new wage and working agreements between the International Brotherhood of Papermakers and paper producing firms is still in progress. During the last week agreements were signed with a number of manufacturing concerns and indications are that May 1, the expiration date of old contracts, will pass without the slightest semblance of friction in the paper industry. The new agreements, according to officials of the brotherhood, are being negotiated on the basis of last year's wages.

According to a statement issued from the International Brotherhood of Papermakers' headquarters in this city agreements have been renewed with the following companies: John H. Manning Company, with mills at Troy and Green Island, N. Y.; Great Northern Paper Company, with mills at Millinocket, East Millinocket, and Madison, Me.; J. R. Booth Ltd., of Ottawa, Ont.; E. B. Eddy Company, of Hull, P. Q.; Ontario Paper Company, of Thorold, Ont.; St. Croix Paper Company, of Woodland, Me.; Sears, Roebuck & Co., Chicago; Hopper Paper Company, Taylorville, Ill.; Union Bag and Paper Corporation, with mills at Kaukauna, Wis.; Cheboygan, Mich., and Hudson Falls, N. Y.; St. Maurice Paper Company, Three Rivers, P. Q.; Consolidated Power and Paper Company, with mills at Wisconsin Rapids, and Stevens Point, Wis.; Provincial Paper Company, of Port Arthur, Ont.

At brotherhood headquarters it was stated that conferences had been arranged and will be held between now and May 1 with the following companies: Spanish River Paper Mills Ltd., with mills at Sault Ste. Marie, Espanola, and Sturgeon Falls, Ont.; Finch, Pruyn & Co., of Glens Falls, N. Y.; Unity Paper Company, Potsdam, N. Y.; Cushnec Paper Company, Augusta, Me.; Howland Paper Company, Howland, Me.; Fort William Paper Company, Fort William, Ont.; Abitibi Power and Paper Company, of Iroquois Falls, Ontario; Minnesota and Ontario Paper Company and Fort Francis Paper Company, with mills in International Falls, Minn., and Fort Francis; Keewatin Lumber Company, of Kenora, Ont., and Daily Newspaper Corp., of Tonawanda, N. Y.

It is said that the existing agreement with the Carlisle group of mills at Deferiet, Black River, Norwood, Norfolk and Raymondville, N. Y., will continue through another year. Present agreement, it was stated, carries a continuation clause to the effect that if no notice of any desired change by either party is given thirty days prior to the expiration of the contract it shall continue in full force and effect for another year. Neither the company nor the unions has given notice of any desired change in the prevailing wage rate.

Finch, Pruyn & Co., of Glens Falls, have notified the International Brotherhood of Papermakers that it will meet with the union representatives on April 30 or May 5, whichever date is most convenient. The present contract between the unions and Finch, Pruyn & Co. runs until May 11.

The agreement with the Sherman Paper Company, with mills at Felts Mills, N. Y., is a five year contract carrying a wage adjustment clause for May 1 of each year. In this case there has been no notice served by either party of any desired change in the wage rate that prevails and accordingly the same wages will continue at this plant for the next twelve months.

Pulp and Paper Mill Men to Meet

The sixth annual convention of the American Pulp and Paper Mill Superintendents Association will be held on June 4, 5 and 6 at Niagara Falls, N. Y., headquarters being at the Hotel Niagara.

Those attending will register at headquarters at 8 oclock Thursday morning and the regular sessions will start at 9 o'clock at the K. of C. Auditorium where all the business sessions will be held.

After invocation by Rev. P. W. Mosher, the opening address will be delivered by President Nelson R. Davis. Mayor William B. Laughlin will then deliver an address of welcome which will be responded to by Fred J. Rooney. John S. Schumaker will then speak on "Humanics and Organization Development" and Harry E. Weston on "Apprenticeship and Educational Problems."

The afternoon program will be as follows:—"Pulverized Fuel," W. C. Heckereth; "Power Problems," R. W. Leeper; "Bonds, Writings and Fine Papers," W. D. Sommerville; "Future of The Industry and Forestry," Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association; "Straw and Coarse Papermaking," H. G. Funsett; Moving Pictures of Engineering Problems, George S. Anderson, publicity director of the Niagara Falls Power Company.

At 7 o'clock Thursday evening the annual dinner will be held at Hotel Niagara. John J. White will be the toastmaster and the speakers will be Norman W. Wilson, President of the American Paper and Pulp Association, Charles M. Newcomb and A. Monro Grier, president of the Canadian Niagara Power Company.

The program for Friday morning will be:—"Continuous Grinding," American Voith Contact Company; "Waste," B. T. McBain; "Recording Devices," Tom Harvey; "Papermaking Problems," Homer H. Latimer; "Asbestos Dryer Felts," H. N. Hill Company; "News Print Paper in North America," R. S. Kellogg, secretary of the News Print Service Bureau.

At the afternoon meeting, A. T. Simonds will speak on "Business and Economics" and Adolph F. Meyer on "Ground Wood Pulp." "Yield per Cord of Various Woods in the Sulphite Process" will be the subject of a talk by G. J. Armbruster and "Waste Water Problems in News Mills" the title of an address by Vance P. Edwards. Then will come the election and installation of officers. In the evening there will be a dinner at the Hotel Niagara sponsored by the Industries of Niagara Falls which will be followed by vaudeville. Saturday will be devoted to sight-seeing trips around the Niagara Gorge.

Loss in Production Caused by Swedish Strike

WASHINGTON, D. C., Rpril 29, 1925.—It is estimated that the recent Swedish labor conflict caused a loss in production of 15,000 metric tons of mechanical pulp, 40,000 tons of chemical pulp and 11,000 tons of paper, says a report to the Paper Division of the Department of Commerce from Commercial Attache Klath at Stockholm.

Prices, however, says the report, show little or no effect of the conflict. Of the anticipated 1925 production, 65 per cent of the sulphite pulp, 80 per cent of the soda pulp and 65 per cent of the mechanical pulp have been contracted for a number of the sales being for 1926 delivery. There is reported to be an increased demand for high grade chemical pulp by the Italian Silk Industry.

Rochester Paper Firms Consolidate

ROCHESTER, N. Y., April 27, 1925.—The Fred D. Morgan Company, Inc. and the Cramer Force Company have been consolidated with offices and warehouse at 28 Aqueduct street. The new company will retain the name of the Cramer Force Company and C. A. Morgan will devote his time principally to the sales end of the business. Mr. Morgan is secretary-treasurer of the Empire State Paper Association.

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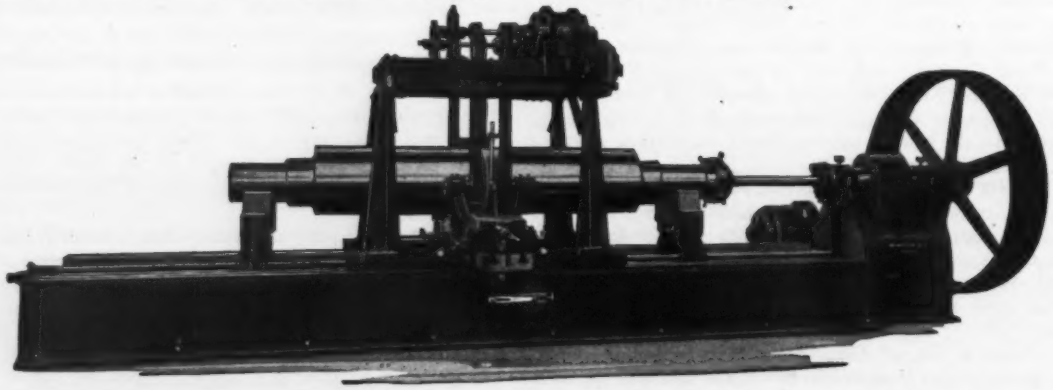

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

The Curling of Fine Papers*

By H. H. Hanson, Member TAPPI, Eastern Mfg. Co., Bangor, Me.

Paper has probably curled since fourdrinier machines have been in existence but it is only in recent years that the paper maker has had the matter called forcibly to his attention. The fact that curling is now so important is probably due mostly to the introduction of automatically fed printing presses, the feeders of which cannot function if the sheets do not lie flat.

Definition of Curling as Used Herein

Curling has many manifestations, all more or less related. In order to avoid confusion I am going to limit the main part of this talk to one kind of curling viz., that which manifests itself in a rolled or turned-up edge and I choose this kind because it is fairly clean-cut and probably the most common. Later I shall be glad to discuss any of its relatives such as wavy edges, non-registration, sticking to the printing press, etc.

There will undoubtedly be some whose observations on curly paper will have been different from mine. I believe, however, that if we consider carefully the conditions under which our observations have been made, we will find our disagreements dissipated. My data have been obtained in the manufacture of bond papers from sulphite and rag stock, machine-, air-, and pole-dried. The papermachines used have been standard fourdriniers with suction couch-roll, two presses and a smoothing press, or three presses.

The time of development of the curl after the paper has been made, varies considerably. Sometimes the edges will roll up as soon as the sheet comes off the cutters, sometimes the curl will appear gradually in the load as it stands in the finishing room, and sometimes the paper will apparently lie perfectly flat until the printer places it on the printing press.

The first of these manifestations, where the edge curls up at the cutters as soon as the paper is free from restraint, I call "inherent" curl because it is apparently inherent in the paper as made. The second and third, where the curl develops more slowly may also be at least partly inherent but it requires some change in the condition of the paper before it begins to show up. We might call this the "delayed" curl.

As you have no doubt noticed, the direction of curl is almost universally the same on machine-dried papers, namely with the rolled edge in the machine direction and curling preferably towards the wire side. In the development of the causes of curling I have used this fact as a basis for analysis.

Regardless of what brings it about, one fundamental fact is always associated with a sheet of curly paper, namely, that the concave side must be shorter than the convex side. To illustrate, let us consider two concentric circles. The circumference of the inside circle is always less than the outside one no matter how small the distance between them. If we now imagine a sheet of paper rolled into a cylinder and look at the end section of the cylinder, we find two concentric circles represented by the inside and outside surfaces of the paper. Of course the inside surface must be the shorter. A sheet of paper when curling tends to assume the shape of a cylinder but only gets part way except in extreme cases. The curled shape being the natural shape, the concave side must be shorter than the convex side. The difference in length of the two sides is not great. If we assume a sheet 8½ x 11 inches to have naturally the shape of a half cylinder, the 11 inch direction being along the length of the cylinder, the difference in length of the two sides is only 7/1000 of an inch or about equal to the thickness of a sheet of 32 folio paper. We may, therefore, safely assume that curliness is due to something which makes the paper two-sided, terminating, when the curl has taken place, in the condition that one side of the sheet is shorter than the other. Since the curl is normally towards the wire side, we can further say that when curl has taken place, the wire side of the sheet is shorter than the felt side.

"Coherence"

Before discussing the reasons why one side of a sheet of paper may be smaller than the other side, I wish to bring out one quality that paper must have in order that the causes of curling, whatever they may be, may get a chance to act. This quality I shall call "coherence." To illustrate, let us consider two sheets of paper, one a blotter, the other a bond paper. The blotter is made from very free stock, it is fuzzy, it has comparatively little strength. Expressing all these points in another way, we may say that the individual fibers of a blotter are not very strongly bound together and each is free to move, irrespective of its neighbors, when for any reason it is put under stress. The sheet of bond paper on the other hand is made from well hydrated stock, it is beater sized, probably tub-sized and comparatively strong. In other words, the fibers are strongly felted together and strongly bound together by the gel or slime produced in beating and by the sizing. The individual fibers are not free to move, to contract or expand without affecting their neighbors, and thereby, the whole sheet. If when the sheet of blotting and the sheet of bond are exposed on one side to a condition under the influence of which the individual fibers shrink, the fibers

*Paper presented at Divisional Meeting, Superintendents' Association, Richmond, Va., April 23, 1925.

of the blotter will simply pull apart from each other, but the fibers of the bond sheet, all shrinking together as a coherent unit, will cause the exposed side of the sheet as a whole to become smaller than the unexposed side. The result is a sheet of curly paper.

This factor of coherence is extremely important. While it is not necessarily of itself a direct cause of curling it is easy to see that if paper has two-sided qualities, increased coherence will produce increased curl. There is also the point, as we shall see later, that a sheet may be more coherent on one side than the other. This would be a direct cause for curling.

The Causes of Curling

We now come to the real causes of curling. They are primarily, as we have seen, causes for two-sidedness in dimension. The first on the list is really the last to take effect but it is very important and some of the other causes are associated with it so I bring it up now. It is the curl due to drying out of one side of a sheet.

Cellulose is hygroscopic. All paper contains more or less moisture, the exact amount depending directly on the humidity of the air to which the paper is exposed. We know that on a damp day paper feels soft and flabby while on a dry day it feels hard and rattly. Translating this into figures, we find that on the damp day of say 75 per cent relative humidity, paper will pick up 9 per cent moisture if long enough exposed. On the dry day, of say 40 per cent relative humidity, it will hold only 5 per cent moisture. Now suppose the sheet of paper of 5 per cent moisture content be tacked tightly to a board and exposed to a condition where it will absorb more moisture. We notice that the paper no longer lies flat but gets bubbly and wavy. In other words, it has expanded and there is not room between the tacks for the flat paper. If we dry it out again it returns approximately to its original conditions, or in other words, it shrinks as it dries out. Now suppose a pile of paper containing 6 per cent mosture, which is in equilibrium with about 50 per cent relative humidity, be placed in a room of 30 per cent relative humidity, the upper side of the top sheet will quickly dry out, whereas the bottom side will, for a time at least, be unaffected because it is not exposed. Of course the result is that the upper side shrinks and the edges curl up. This is what very often happens in a print shop or finishing room to an apparently flat pile of paper. If the paper has a natural tendency to excessive shrinkage on the wire side, which it probably has, the condition of curl is very much exaggerated, because the wire side is usually the upper side. The wire side is also very often the side the printer likes to use because it is apt to be a little smoother than the felt side.

The usual humidity conditions of a print shop in winter is between 20 and 30 per cent, in other words, the air is very dry. Paper as shipped contains 4 to 7 per cent moisture, the amount usually depending on the type of finishing operation and on the humidity to which the paper has been exposed in the finishing room. The 4 per cent figure is approximately in equilibrium with a very dry room but paper at anything higher than that will dry out and if other conditions permit, will curl. From this it would seem that the thing to do is always to ship dry paper but it is not as easy as that because in the summer time, the print shop humidity is high and dry paper will show another kind of curl, namely wavy edges.

Two-Sided Formation

The second on my list of causes is two-sided formation. If you examine carefully the two sides of a sheet of paper, you will find more fibers running in the machine direction on the wire side than you will on the felt side. A good way to prove this to yourself is to run some granite paper, where the colored fibers will show it strongly. The explanation seems to be as follows: As soon as the stock leaves the apron and reaches the wire, a thin bottom layer of the sheet is quickly formed by the rush of water through a clean wire. This thin layer is held tightly to the wire by the weight of stock over it and it is therefore very little affected by the shake. It follows then that if the wire is travelling faster than the stock when the stock strikes it, and this is usually more or less true, these fibers on this bottom layer will tend to be pulled into the machine direction. At a given speed of the wire, the lower the head behind the slice, the worse will this result be.

What is the effect of this two-sided formation? Cellulose fibers, as we have seen, contract and expand as they give up and take on moisture. The expansion and contraction is largely in the diametrical direction, the change in the long direction is comparatively small. Thus as the two-sided sheet is dried, there is a tendency for the wire side to shrink more in the cross-machine direction than the felt side. Actually it cannot do this because the sheet is held firmly on the driers and in the reel, but unless the fibers are pulled apart by their inability to shrink according to their desire, there will be a certain tension set up between the fibers on the wire side. At the first opportunity, which occurs when the paper is cut into sheets, the tension will take effect, pulling in the wire side and making the paper curl. The tension comes in the cross-machine direction, making the curly edge in the machine direction.

Two-Sided Rosin Sizing

The next on the list is the two-sidedness of rosin sizing. You have undoubtedly noticed that if paper has a slight tendency to be slack sized, it is always the wire side that shows it first. This is because the rosin size is forced off the bottom side of the sheet on the wire by the flow of water through the sheet and by the suction boxes and suction roll.

Rosin is of course waterproof and is put into the paper for that reason. The result then is that paper is more waterproof or moisture-proof on the felt side than it is on the wire side. This affects curling in three ways. First, it means that the wire side dries more easily on the paper machine, leaving a tendency for the wire side to be shorter than the felt side. Secondly, the wire side will be more sensitive to humidity changes and more liable to shrink out of proportion to the felt side in a print shop. Thirdly, if the sheet is tub-sized, the wire side will pick up more tub size than the felt side, which will be shown to be very important.

Two-Sided Tub Sizing

My next item is two-sided tub sizing. Tub size, such as glue, starch and the modified starches, all exhibit the same characteristics as cellulose, as regards humidity changes. They expand and take on moisture or contract with a loss of moisture, according to the conditions to which they are exposed. But the changes undergone by those materials, under the same humidity changes, are much greater than those of cellulose, especially the change in dimension. You all know that a flake of glue or grain of starch will swell to many times its volume if properly treated with water. You know also that a sheet of paper gummed on one side will curl itself into a cylinder as the gum dries.

Tub size is applied to the surface of paper in the form of a colloidal solution. It penetrates more or less into the interstices and the paper, depending on the time interval between dipping and drying. As the moisture evaporates, it leaves a film of gummy material, covering the surfaces and the individual fibers. This film is much more liable to change in dimension with changes in moisture content than the sheet of paper it covers. The film is moreover strong, if thick enough, and very coherent, so that as it changes dimensions, it pulls the paper with it strongly.

We have seen that if paper is tub-sized it will pick up more size on the wire side than on the felt side. Therefore a thicker, stronger film will form on the wire side when the sheet is dried. This is especially true of machine-dried papers where the time for penetration and therefore for equalization of the two sides and body of the sheet is very short. This, coupled with the fact that the felt side contains a greater amount of nonhydroscopic rosin, gives us another condition, whereby drying out of the paper will cause greater and more forceful shrinkage on the wire side.

There is one more curling cause which applies however to pole-dried paper only, that is the pole mark. The tub-sizing operation expands paper in the cross machine direction about 3 per cent. During drying again, the paper naturally shrinks about the same amount providing it is not under restraint. As the bunch of 15 to 20 sheets of paper hangs over the pole, that portion of the sheets hanging below the pole does shrink unrestrainedly. The part lying over the pole, however, is held by the weight of the hanging side and the pressure of the upper sheets, so that it dries under a condition of stress and does not shrink its full quota. After removal from the loft, this part, which was over the pole is larger than it should be and the result is, a long bubble across the sheet. This bubble persists through the finishing operation. When the sheets are cut by the printer into such sizes as he wants to use, a new edge of the sheet may run along the bubble. If it does, the edge will immediately turn up, giving a curly effect.

Effect of Varying Coherence

We have now found four causes for curling of machine-dried papers and one extra one for pole-dried papers. It is safe to say that these causes for curling are nearly always present in the paper to some extent. The print shop condition exists regardless of what the paper maker can do and he cannot help getting some two-sided sizing and probably some two-sided formation. If this is so, then why does not all paper curl? The answer is threefold. In the first place, these causes for curling can be reduced to a minimum by careful operation, secondly, we have the factor of coherence, through which the causes act, and thirdly, there are at least two operations of the machine which counteract curling.

Let us consider for a moment the factor of coherence. A piece of blotting paper may be two-sided in all its qualities and yet it does not curl. As we have seen, the difference between this and the bond sheet is in the binding material added to the paper in the form of beating slime, rosin sizing and tube sizing. These materials, in addition to two-sidedness, are necessary to give curly paper and the extent to which they are present is therefore a large factor in the amount a given lot of paper will curl.

Prevention of Curl

As stated, there are some normal machine operations which tend to counteract the tendency for curling towards the wire side. One of these is pressing. On the last press the felt side of the paper comes in contact with the felt and the wire side in contact with the smooth surface of the press roll. The tendency then is for the felt fibers and threads to push into the surface of the felt side of the paper, giving a very slight hill and dale effect. This tends to enlarge the surface of the paper and at the same time produces a tension on the fibers of that side, which endures to some extent in the dry paper. It counteracts the tension on the wire side caused by two-sided formation, sizing and drying. The more pressure and the coarser the felt used, the more marked will be the effect.

Another operation tending to stop curl is finishing. Calendering or any kind of finishing tends to break down the bonding films between fibers and also the felting strength. In combination with this effect it stretches out the wire side, if this side has a tendency to shrink more than the felt side, until the two sides are more nearly equal. On pole-dried papers it neutralizes the pole mark of ledgers so that it is hardly noticeable.

Any kind of loft or air drying serves to neutralize the two-sidedness and curling caused by tub-sizing, by allowing time between the dipping and drying periods. During this time the size penetrates into the sheet and it may be said to form a single uniform film covering and permeating the sheet. Therefore it does no harm except in making the paper more coherent, in fact it probably does some good by tying the two surfaces together so to speak. Loft and air drying also permit the use of comparatively small quantities of rosin size, tending to cut down the two-sidedness and coherence effect of this factor. This does not mean that loft dried paper will not curl because the pole mark factor is very serious but it does show that air dried paper is much less liable to curl than any other tub-sized paper.

In addition to such of these factors of compensation as we can use, it is evident that we must take every possible step with other qualities to decrease the natural two-sidedness and coherence which we normally get. If the paper contains sulphite pulp the pulp quality is of enormous importance, we have found that it is entirely possible to cook pulp which the paper maker can do nothing with, as far as curling goes, and on the other hand, it is possible to cook pulp which offers the minimum possibility of curley paper. Of course the factor herein involved is the hydration or slowness factor. The buyer of pulp is at a considerable disadvantage in this respect as compared to the mill that makes its own unless it can get together with the pulp mill from which it is buying and work the problem out.

Having taken all precautions in the raw material and manufacture it is finally important that the paper shall be shipped with a moisture content as near the average print shop conditions as possible.

Disposal of Broken Paper

SPECIAL INQUIRY No. 24

One of our paper machines is located in a building without a basement which, under our present method of operation, necessitates a broke handler to take care of the loose broke and shavings which have to be carried to the wet end of the machine where the beaters are located. Do you know of some scheme or some inexpensive machine that could be located near the calender stack that would act as a shredder of the loose broke which would tear the paper apart and then permit us to blow it to the beaters, a distance of some 250 feet. Of course this would be simple if it were only a question of the shavings, but having the loose broke to contend with it is an entirely different proposition.

I thought that possibly you might know of some condition similar to ours, or you could send out inquiries to find out what could be done to eliminate three broke handlers; that is, one for each shift. Shall be much obliged for any information you can give me on the subject.

A MEMBER.

Copies of responses sent to W. G. MacNaughton, secretary of the Technical Association, at 18 East Forty-first street, New York, N. Y., will be distributed, in blank, to all who contribute to the discussion.

Bursting Strength of Case Lining Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., April 29, 1925.—Some question has arisen in regard to the bursting strength requirement in the case lining paper specifications recently recommended by the Paper Section of the Bureau of Standards. Discussing this the Paper Section says:

"This paper is made by cementing together two sheets of No. 1 kraft paper with a layer of asphaltum. Existing specifications provided for paper of strength equal to that of the two sheets of kraft paper only. Tests of representative samples indicated that the asphaltum lent increased strength to the paper and, therefore, it recommended that the strength requirement be increased sufficiently to insure the use of No. 1 kraft as the basic paper. In order to determine more definitely the effect of asphaltum on the strength of the finished papers, samples of the case-lining paper, together with the basic kraft paper used in making it, were secured from eight different manufacturers. These papers were tested for bursting strength. The average increase in strength of the finished, asphalted paper over that of the basic paper was 22 per cent. As the increased strength provided for in the specifications is only 17 per cent it would seem that this requirement should be retained."

How to Measure White Water Losses

By Vance P. Edwardes[1]

There is one aspect of paper mill operation which, though not recognized as a department and generally overlooked, succeeds in making its presence felt month after month on the balance sheet, but always on the wrong side. The economical use of water and the recovery of its solid content are of as great importance to the welfare of the mill as many other parts dignified with the name of departments.

Just as the metallurgical industries find it necessary to keep a constant check upon the loss of valuable metals in the furnace slags, so the paper mill operator should know his plant's daily discharge of white water and its valuable content. The accurate measurement of white water, however, offers difficulties which are sometimes hard to overcome. On the other hand there are features of the determination of the solid content which can be much simplified in certain cases. The information here presented has been compiled from a number of sources[2] (including personal experience), in the hope of rendering the methods of measurement more accessible.

The authorities are unanimous in declaring the weir one of the most accurate devices for measuring flowing water, and its use is therefore strongly recommended for paper mill work. The proper installation of a weir is not as simple a matter as it might seem at first glance, and many factors must be considered if an accurate record is desired.

For conciseness the following symbols are used throughout:

For all weirs:

H = Measured head, or difference in elevation between crest (lowest part) of weir, and water surface upstream.
A = Area of section of channel of approach.
W = Width of the channel of approach.
P = Height of crest of weir above bottom of channel of approach.
Q = Discharge over weir in second-feet (i. e., cubic feet per second).

V = Velocity of approach $= \frac{Q}{A}$.

g = Acceleration due to gravity.

h = Velocity $= \frac{V^2}{2g}$.

G = Depth of water upstream from the weir = P + H.
d = Area of section of channel of approach divided by the length of the weir, a factor used in correcting for velocity of stream.

For weirs with end contractions (i. e., weirs less than the full width of channel):

L^1 = Measured length of weir.
L = Length of weir corrected for end contractions.

$d = \frac{A}{L}$ for any channel of approach, and $\frac{WG}{L}$ for a rectangular channel of approach.

For weirs without end contractions ("suppressed" weirs):

L = Measured length of weir.

$d = \frac{A}{L} = G$ = Depth of water upstream from the weir.

CONVERSION TABLE

One second-foot = 86,400 cubic feet per 24 hours.
One second-foot = 448.83 U. S. gallons per minute.
One second-foot = 646,317 U. S. gallons per 24 hours.
One cubic foot per minute = 10,772 U. S. gallons per 24 hours.

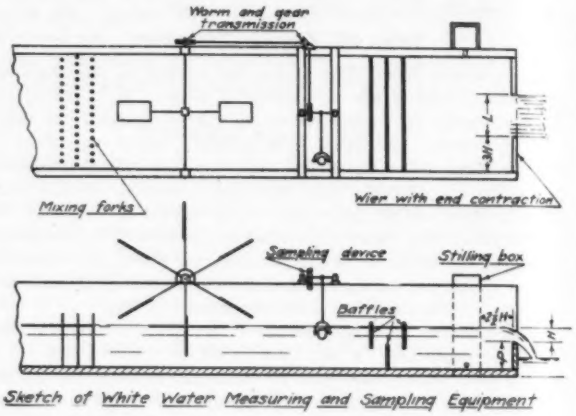
Conditions Covering the Choice of a Weir

Usually the quantity of water, or the limiting quantities if the rate fluctuates, may be determined approximately before beginning the measurement. The best weir for the purpose may then be selected, with careful consideration of the following important points:

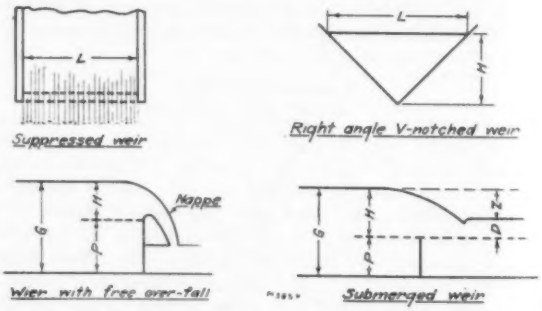
1. Owing to the tendency of the discharge or "nappe" to adhere to the down-stream face, weirs should not be used where the measured head is less than 0.2 feet.

2. For accuracy in measurement, the length of a rectangular weir should be at least three times the head.

3. The percentage of error in discharge resulting from a given error in measuring head decreases as the head increases. Greater accuracy may, therefore, be secured by selecting a weir of such dimensions as to insure discharge at the maximum head practicable, subject to the requirements of paragraphs 1, 2, and 3 above.



Sketch of White Water Measuring and Sampling Equipment



Water Measuring and Sampling Devices

Right Angle V-Notch Weir

Right angle V-notch weirs are preferred to weirs of any other type for measuring widely fluctuating discharges. Theoretically they are the most accurate for volumes met with in paper mill work, but practical experience has nevertheless shown that the volumes indicated may be decidedly in error owing to the adherence of the nappe to the upper part of the weir notch. This is particularly true if the opening becomes at all slimy, as may easily happen in any mill, and the operation of the weir should be closely watched.

Probably the best formula for the V-notch weir is,

(1) $Q = 2.52\ H^{2.47}$

The weir should be carefully set so that the sides make equal angles with the horizontal.

In case it is desired to correct for velocity of approach, the formula

(2) $Q = 2.52\ H^{2.47}\ (1 + 0.23\ \frac{H^4}{A^3})$

[1] Engineer in Forest Products, U. S. Forest Products Laboratory, Madison, Wis.

[2] Much of the information has been taken from King: *Handbook of Hydraulics.* Other sources consulted are: Trautwine: *Engineers' Pocket Book.* Kent: *Mechanical Engineers' Pocket Book.* Mark: *Mechanical Engineers' Handbook.* Peele: *Mining Engineers' Handbook.*

applies, but the correction is not generally considered necessary unless the velocity of approach exceeds 0.5 foot per second.

Rectangular Weirs

Probably the most accurate formula for rectangular weir discharge is

$$(3)\quad Q = 3.34\ L\ H^{1.47}\left(1 + 0.56\ \frac{H^2}{d^2}\right)$$

for a weir without end contraction ("suppressed" weir). Where there are end contractions, L, the effective length, is obtained by the formula

$$(4)\quad L = L' - 0.2\ H,$$

where L' is the measured length.

In formula (3) the term

$$3.34\ L\ H^{1.47}$$

will give the discharges without the velocity of approach correction. The expression within the parenthesis is the factor correcting for the velocity of approach. The latter may be neglected under the same general rule applying to V-notch weirs, in which case the formula becomes

$$(5)\quad Q = 3.34\ L\ H^{1.47},$$

or more simply the "Francis formula"

$$(6)\quad Q = 3.33\ L\ H^{1.5},$$

which is accurate within about 5 per cent, may be used.

It is advisable to avoid the use of rectangular weirs with end contractions, though the length of weir between contractions, if used, should be at least 3 H, or more, if possible.

Submerged Weirs

Mill conditions may be such that the installation of a weir with a free overfall is impossible. In such a case a submerged weir may be used. As is indicated in the figure, the level of the water downstream from the weir is higher than the weir crest. The discharge of a submerged weir is not seriously reduced, and the same formula applies as is used for weirs with a free overfall, provided the depth of submersion of the weir crest below the downstream level is not greater than 20 per cent of the head above the crest. The head of water below the weir to determine submersion should be measured sufficiently far downstream to avoid the disturbance caused by the fall of the water.

Precautions for Accurate Use of Sharp-Crested Weirs

In order to obtain the most accurate results from weir measurements, the following are some of the precautions to be observed and conditions to be fulfilled:

(1) The head (H) should be measured at a distance at least 2.5H back of the weir.

(2) For the best results, H should be measured by means of a hook gage in a well or stilling box connected by a small pipe to the channel. The box should be about one foot square and the pipe about ¾ inch in diameter. Where a recording level gage is installed it will be almost necessary to use a smaller inlet, say ⅜ inch, since otherwise the recording pen will "hunt," thus using the ink too rapidly and giving a broad band for the record rather than a line. The pipe will need frequent cleaning if reliable records are to be obtained. The box can be located either outside the sewer or in the stream, provided it is sufficiently far back of the weir so that it will not interfere with the flow. The head should be determined from the mean of ten observations taken at about one-minute intervals.

(3) The crest of the weir should be so constructed as to insure perfect constraction of the discharge into a smooth stream. This requires that the up-stream edge shall be sharp and smooth and that the crest shall be thin enough to prevent any tendency of the water to adhere to its top surface. A metal crest free from rust, with a sharp right-angled corner on the up-stream edge, a width of ⅛ inch, and beveled to the thickness of the metal on the lower face, should give satisfactory results. The up-stream face of the weir should be vertical, and for rectangular weirs the crest should be level.

(4) Care is necessary when H is less than 0.3 foot to prevent the nappe adhering to the crest and the down-stream face of the weir. When H is 0.2 foot or less it becomes very difficult to prevent such adherence, and the formula for sharp-crested weirs become unreliable. When thoroughly aerated, however, the nappe will spring clear of the edge if the width of the crest is not more than ½ H. With a rectangular weir the result can be assured by installing a ½-inch pipe, extending from just under the edge of the nappe to any convenient point at the side, through which a sufficient amount of air will be drawn. The water surface on the down-stream side of the weir, however, should in this case be at least ½ H below the crest of the weir.

(5) No water should be allowed to leak past the ends of the weir or under it. For a permanent weir special precautions should be taken to guard against such defects.

(6) In case the flow is turbulent before reaching the weir it will be necessary to install baffles sufficiently far up-stream to render the flow smooth by the time it reaches the stilling box and weir crest.

RECOMMENDED WEIR DIMENSIONS

Discharge (Q) in second-feet	Head (in feet) for weirs of various lengths				Head (in feet) for right-angle V-notch weir
	1 Foot	2 Feet	5 Feet	10 Feet	
0.25	...	...	...	...	0.20
0.10	...	...	...	...	0.27
0.50	0.27	...	...	...	0.52
1.00	...	0.27	...	...	0.69
2.50	...	0.51	0.27	...	1.00
5.00	...	...	0.44	0.27	1.32
10.00	...	...	0.71	0.44	1.75
25.00	...	...	1.32	0.82	...

Other Means of Measuring Water Volumes

Unfortunately it frequently happens that the sewers and the lines discharging into them are located in the most inaccessible places, the mill architect apparently working on the basis of "out of sight, out of mind." Under such conditions gaging the water volume is particularly difficult, and it may be necessary as a last resort to use other means than weirs.

The following are methods which have been used under various conditions for determining the flow of water:

Current meter	Gravimetric measurements
Pitot tubes	Volumetric measurements
Floats	Orifices
Traveling screens	Meters
Color methods	Chemical gaging

Gravimetric and volumetric methods of measuring water, which require the determination of the weight or volume of water flowing in a given time, are adapted primarily to experimental work in laboratories, or to the measurement of comparatively small quantities of water, and need not be described, here.

Velocity-area methods involve the determination of the mean velocity of the water, and with the cross-sectional area of the channel known the discharge equals the products of the two factors. The color and traveling screen methods provide for the determination of the mean velocity from a single observation. The current meter and Pitot tube give velocities in only one ponit in the cross-section at a time, and floats give the mean velocity in a limited area of the cress-section.

Before studying in detail the different methods of measurement, a knowledge of the distribution of velocities in the cross section of a channel is essential. The salient facts will be stated:

1. The maximum velocity occurs at a distance below the surface of about 5 to 25 per cent of the depth of the stream, the percentage increasing as the depth of the stream increases.

2. The mean velocity in a vertical, within a maximum error of

about 3 per cent and an average error of 1 per cent, occurs at 0.6 depth.

3. The mean velocity in a vertical, within a maximum error of about 1 per cent and an average error of zero, is given by the mean of the velocities at 0.2 depth and 0.8 depth.

4. The mean velocity in a vertical is from about 80 to 95 per cent of the surface velocity.

Current Meters

The current meter is generally preferred for measuring velocity in open channels, and is used almost exclusively for rivers. It is not recommended for paper mill work, however. Several types of meters are on the market, having wheels of two general types. The Price, the Ott, and the Haskell meters are all extensively used in the United States.

Pitot Tubes

Pitot tubes[3] are especially adapted to the measurement of velocities in pipes. They also may be used for measuring open-channel velocities that are too high to be conveniently measured with current meters. For any particular channel a plot of the velocities across the flow should be made in order to determine the proper coefficient. Once this is known, future readings need only be taken at the center and the mean velocity determined by using a coefficient, which will approximate 0.84.

Floats

The velocity of a stream as determined by the travel of surface floats is apt to be greatly in error, as the actual stream velocity varies from 0.79 to 0.95 of that indicated at the surface. Rod floats can be used to good advantage in uniform open channels. They consist of hollow cylinders of tin weighted so as to stand vertically, and reaching nearly to the bottom of the channel. The mean velocity, V_m, in the vertical plane down which the rod floats with a velocity V_r is determined approximately by the formula

$$V_m = V_r\ (1.012 - 0.116\ d^1 \div d)$$

where d represents the total depth of the stream and d′ the depth below the bottom of the rod. d′ should not exceed 0.25 d.

About 100 feet of channel should be available for the observations. This method of measuring velocities should be used only to obtain an estimate of the volume in order that a proper weir may be selected.

Traveling Screen

The traveling screen method is suitable only for open channels of very regular cross section. It requires quite eleborate preparation and will not be considered in the present connection.

Color Method

For determining velocities of liquids in pipes and possibly in turbulent open channels the color method is capable of yielding results of a high degree of accuracy.

The process consists in injecting a oslution of coloring matter, commonly fluorescein, into the pipe and observing the time required for it to move a known distance. The coloring matter may be introduced at the intake of the pipe or it can be injected by a force pump or gun into the pipe at any point. The second point of observation, which must be at the outlet of the pipe, should be at a distance of at least 200 times the mean travel per second. Time observations should be made at the instant the coloring matter is introduced and at the first and last appearance of the coloring matter at the second point of observation. The mean velocity is reckoned as the distance between the two points of observation divided by the mean of the two time intervals.

A very satisfactory gun for injecting the coloring matter can be made from a bicycle pump connected to the pipe by a short length of garden hose. A coupling and a ⅛ inch air cock are provided between the hose and the pipe. About one teaspoonful of fluorescein dissolved in a pint of water is sufficient for ten injections in a pipe carrying up to six second-feet.

In making the test the coupling is opened and the solution poured into the garden hose. The coupling is then re-connected and the air valve between pipe and hose is opened so that the pressures are equalized. The air valve is closed and the pressure in the hose increased by pumping the gun. While noting the time to a second, the air cock is opened and almost immediately closed.

Comparison of the color method with very carefully constructed weir measurements shows that it is correct within about 3 per cent. The method has been modified by Professor C. M. Allen, Professor of Hydraulic Engineering, of Worcester Polytechnic Institute, Worcester, Mass., by substituting for the colored solution a concentrated brine and determining the water velocity by means of an electric circuit properly connected to a galvanometer.

Orifices

The satisfactory use of orifices is limited to measurements of flow of liquids under pressure, such a determining the capacity of a fire pump. It is not applicable to white water determination.

Meters

The Venturi meter is quite common equipment for measuring flow through large pipes, but its use in the field of white water measurement seems inadvisable.

Smaller meters of the type used in domestc water supply can very well handle pipe lines up to 6 inches in diameter with a delivery of approximately 118 cubic feet per minute, and will do very well for shower pipes, etc. Probably the best type of small meter is that in which a turbine or other rotating part is revolved by the flow of water. Such meters may be obtained from the following firms: Neptune Meter Co., 50 E. 42nd St., New York; Hersey Meter Co., Boston, Mass.; National Meter Co., 299 Broadway, New York; Worthington Pump & Machine Corp., 115 Broadway, New York; Buffalo Meter Co., Buffalo, New York.

Chemical Gaging

This method consists of determining discharges by introducing a chemical at a known rate into flowing water, and determining the quantity of the chemical in unit volume at a section far enough removed to insure a thorough mixing of the chemical with the water to be measured.

Let Q = the discharge in second-feet.
W = pounds of salt introduced per pound.
N = pounds of salt contained in one pound of water after thorough mixing.

$$\text{Then } \frac{W}{62.4Q} = N, \text{ or } Q = \frac{W}{62.4N}.$$

Simple as is the principle embodied, the above formula is somewhat inconvenient to apply, owing to the several factors which enter into the determining of N. Before attempting to measure the actual discharge it will be necessary to make a preliminary investigation, in order to determine the proper place for taking samples of dosed stream water and the necessary time interval between the time of beginning dosing and of taking the sample. Chemical gaging is best suited to conditions of turbulent flow and probably can not be applied satisfactorily to sluggish flow. For further information on chemical gaging the reader is referred to the following articles: Chem-hydrometry and precise turbine testing, by B. F. Grant. *Trans Amer. Soc. Civ. Engr.* vol. 80, p. 951. Verification of the Bazin weir formula by hydro-chemical gaging, by F. A. Hagler, *Proc. Amer. Soc. Civ. Engr.* Jan. 1918.

It sometimes happens that the discharge sewer of the mill is of some other shape than a rectangular flume. If it is a canal in earth the obvious installation is a rectangular weir, but if it is a circular conduit, the solution is not simple and recourse must be had to tables[4].

[3] The design of a Pitot Tube can be found in any of the numerous engineers' handbooks.

[4] See King's Handbook of Hydraulics, p. 203.

Recording Devices

There are a number of water-level recording devices on the market, any one of which will be satisfactory for the purpose. It is recommended, however, that a recorder which produces a continuous record in ink be used. Such apparatus may be obtained from the following firms:

W. & L. E. Gurley, Troy, N. Y.; Julian P. Friez & Sons Belfort Observatory, Baltimore, Md.; Leupold & Voelpel, 107 E. 70th St., Portland, Ore.; Bristol & Co., New York; Foxboro & Co., Foxboro, Mass.; Bailey Meter Co., Cleveland, Ohio.

The types vary, but some general rules apply to all cases:

1. In selecting a recording water level gage a high degree of accuracy is of extreme importance. For a V-notch weir flowing 2.5 cubic feet per second, an error of 0.01 foot in measuring the head will introduce an error of 2.5 per cent in the dicharge; and an error of 0.05 foot will increase the discharge error to 12.4 per cent. For the same flow, a rectangular weir 2 feet long will give quantities in error by 3.0 per cent and 14.7 per cent respectively, and in one 5 feet long 5.5 per cent and 27.3 per cent.

2. The stilling box must be sufficiently large to eliminate surges, and the communicating hole must be as small as possible.

3. To convert the readings of the level recorder to volumes, the rating of the channel for various heights of water can be determined. Then, if desired, an integrating meter showing the volume passed, can be attached to the water level recorder.

4. A stationary gage, graduated in feet and hundredths, should be provided to serve as a check upon the recorder. The zero on both the gage and recorder should be level with the crest of the weir, and means should be provided to check variations.

5. The water level recorder should be placed far enough upstream from the crest of the weir to be beyond the curve taken by the water as it approaches the weir.

To determine volumes from level readings, instead of using a rating table made up from a rating curve, the scale of discharges may be taken directly from the rating curve and pasted on the leg of a transparent triangle. Then by fastening down the day's record as taken from the recorder and clamping a T-square or straightedge along the datum line, the discharges can be read off directly on the triangle[5].

Sampling White Water

A continuous sample is as of great importance as are continuous flow records. It can best be obtained by the use of a paddle wheel driving a small dipper which moves across the flow. The dipper may be either self-dumping or empty into the bucket through a hollow arm and shaft. It will be best if the dipper is made to travel through the white water stream quite rapidly and to complete the remainder of the trip at a very slow speed. This can be accomplished by the use of a ratchet and weight. A 1-inch pump may have to be used where the water level is considerably blow the floor. The paddle wheel offers the advantage of varying the number of samples with the flow. Means must be provided to properly reduce the size of the sample for analysis. The latter point is of great importance.

In order to assure an even fiber distribution in the stream before sampling, it will be necessary to install mixing devices, as otherwise misleading results are sure to be obtained.

Determining the Amounts of Fiber and Filler in White Water

The standard method for determining the fiber and filler content is to filter about 50 c.c. of the white water through a tared filter paper or Gooch crucible, and to dry and weigh the combined fiber and filler. The precipitate is then ashed and the amount of filler ascertained. The determination can be somewhat expedited by using a fluted filter paper, but suction is of no assistance, owing to the nature of the material. The results are usually expressed in pounds per thousand gallons. The fact that the analytical figures are obtained on an even-dry basis must not be overlooked in making later calculations.

The quickest way, however, when little or no filler is present, is to use a centrifuge to throw the fiber to the bottom of a graduated glass tube. By a series of comparative tests it is possible to draw a surve expressing the relationship between the amount of solid material thrown down and the pounds per thausand gallons. For this purpose a tube such as it used in the determination of water and basic sediment in oils is quite satisfactory, though a special tube with a cylindrical bottom rather than a cone offers some advantage, particularly when dealing with white water of high fiber content. or ordinary work at least a 50 c.c. sample of white water should be used. Centrifuging is not adapted to fiber and filler mixtures and in these cases ashing, though slow, is the best procedure to follow. A centrifuge which has been found to give entire satisfaction for the purpose is known as the International—size 2 and is handled by the various laboratory supply houses.

It is most important that mills should keep a close check on the volume and solid content of white water—not at widely separated intervals, but continuously. Frequently the mere fact that records are being kept will bring about an improvement in operation. In general, the investment required to place the "White Water Department" on a sound basis will return a far higher rate of interest than any other outlay made around the mill.

[5] See *Engineering News*, Aug., 1914, p. 458.

Causes and Means of Avoiding Curling of Paper

SPECIAL INQUIRY No. 23

A member submits samples of bond paper where the sheets, under certain air humidity conditions, show a curl parallel to the machine direction and also towards the wire side, an inch high. When a sample sheet is laid on the hand with felt side down it curls to nearly a half circle; with the wire side in contact with the hand it flattens out and shows a tendency to bend in the opposite direction but does not curl.

The furnish of the paper is 25 per cent rag, 85 per cent bleached sulphite-beaten about 2 hours, about 1½ per cent rosin sizing. The engine sized paper is machine dried after which it is tub sized and dried on a Barber machine. Before tub sizing the member states there is no curling but afterwards the paper curls sometimes towards the wire side as in the samples submitted and at other times toward the felt side. So far as could be observed the paper before tub sizing seemed to be equally sized on the two sides.

ANSWER

In tub sized papers generally, and in the case of these particular samples, curling would appear to be due to a difference in the amount of glue on the two sides of the sheet, from whatever cause.

As the curling of paper is quite a general problem in all classes of paper, a discussion of it from all angles will be welcomed. Not only in tub sized bond papers is it observed, but also in thin manifold and machine glazed wrapping paper as well as sometimes in printing papers.

The paper furnish, degree of beating, sizing and drying conditions should be indicated, as they all doubtless have a bearing. Also observation should be made of the direction of the curling, the moisture content of the paper when dried, and the atmospheric humidity affecting the curling.

A transcript of the responses will be sent to all members who contribute to it.

SECRETARY.

C. E. Apelgren Goes With Filer Fibre Co.

FILER CITY, Mich., April 27, 1925.—C. E. Apelgren, chemist in the Technical Department of American Writing Paper Company, Holyoke, has been engaged as chemist at the plant of the Filer Fibre Company here.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Machinery

Process for the Rapid Pulping of Fibrous Materials. *Cellulose et Papiers.* Fr. pat. 570,096. This is practically a combination of patents 569,492 and 569,556. The disintegrator described in the latter patent is placed at the top of the circulating device specified in the former patent, so as to obtain rapid circulation and energetic disintegration at the same time; and the whole is enclosed in a suitable cooker. A charge of 150 kilos of straw, cut into 3 cm. lengths and cooked at 100° C. with 1.5 cu. m. of liquor containing 16% of caustic soda (on weight of the straw), in a cooker having a disintegrator 0.3 m. in diameter, 0.1 m. high, with bars spaced 3 to 5 cm. apart, and rotating at 300 to 500 r.p.m. can be pulped in from 3 to 15 min. with a power consumption of about 2 h.p.—A. P.-C.

Waste Paper Shredder. C. W. Griffin. U. S. pat. 1,481,058, Jan. 15, 1924. The knife cylinder or head, shaft and balance-wheel are cast in one piece. The bed is constructed so that, together with the knife head, it forms a discharge trough for the shredded material. The blades, of which there are two, are double-edged, so that when one cutting edge is dulled the knife need only be reversed. The knife head is rotated at a relatively high speed, as compared with the feed roll, which positively feeds the material between the rotary knives and bed knife.—A. P.-C.

Conical Disintegrator for Paper Manufacture. Wagner & Co. Ger. pat. 398,039. *Papierfabr.* 22, 358 (Aug. 3, 1924). An improved conical disintegrator for pulps, old papers, etc., is described.—J.L.P.

Special Exhaustors for Disintegrating and Transporting Waste Paper in Paper Mills. J. Vogel. *Papierfabr.* 22, 351-353 (Aug. 3, 1924). A special type of motor driven exhausting fans, especially suitable for conveying waste paper, is described.—J. L. P.

Process and Apparatus for Disintegration of Pressed Wood Pulp. John Strindlund. Ger. pat. 396,073. *Papierfabr.* 22, 286-287 (June 22, 1924). To open or loosen pressed wood pulp, for the purpose of facilitating subsequent treatment, the sheets are passed between two rolls containing dull teeth in such a way that no tearing action occurs.—J. L. P.

Refuse Burning and Bark Driers. Arthur S. M. Klein. *Paper Trade J.* 79, No. 12, 43 (Sept. 18, 1924). Brief sketch of the refuse burning furnace recommended by the Gothenburg (Sweden) Section of the Associated Boiler Owners and of the Bodlund bark drier.—A. P.-C.

Hand or Machine Barking. H. Fay. *Wochbl. Papierfabr.* 55, 1679-1680 (July 5, 1924). A reply to A. Bezner (same magazine 55, 1342-1344).—J. L. P.

Hand or Machine Barking. A. Bezner. *Wochbl. Papierfabr.* 55, 1680 (July 5, 1924). Controversial with H. Fay (same reference).—J. L. P.

Portable Log Barker. N. E. Ward. U. S. pat. 1,478,193, Dec. 18, 1923. Barking is effected by a (preferably metal) roller with its surface provided with upstanding studs of general pyramidal shape with tops either sharp or slightly flattened. The wood is fed down an incline with feeding disks having large notches to allow of one log at a time being sent to the roller, against which it is pressed by crescent-shaped arms. Means are provided for quickly discharging the barked logs, and for disposing of the bark. The machine is mounted on skids so that it can easily be transported in the woods to bark the logs as soon as felled, even during the winter. The barking roller is driven at relatively high speed, preferably 900 to 1,000 r.p.m.—A. P.-C.

Log Barker. E. G. Stack and J. E. Stack. U. S. pat. 1,484,912, Feb. 26, 1924. The machine is intended to remove the bark from the huge logs of any diameter, length, shape, or thickness of bark, as found on the Pacific Coast. It consists essentially of a suitable superstructure carrying shafting from which are suspended a series of hinged units, sufficient in number to work over the longest log contemplated at one operation. Each units consists of one or more buffer bars and one or more tooth bars which are cushioned and yield to the varying contours of the log together, but independently as units. The tooth bar is adjustable to varying thickness of bark and is equipped with detachable girdling and ripping teeth. A series of hinged adjustable chain bars carrying a driven chain with detachable teeth works in conjunction with the tooth bars by rotating the log against them in the water of a basin enclosed by adjustable end dates, one of which is opened to let the log into the basin, and the other to discharge the barked log. After the log has been discharged, the chain bars are drawn clear of bark gleaners which are at the bottom of the operating tank, and which are then hauled up to a self-dumping position, emptying into a suitable conveyor.—A. P.-C.

Digesters. J. Stewart and R. J. Brown. Eng. pat. 217,130, Nov. 17, 1923. Digesters which are emptied on the "blow out" principle are provided at the bottom with a permanently fixed rotary tube passing up through the inlet connection and having a number of jets distributed along its length, one or more jets being arranged in the inlet connection itself, in the space between the bottom of the digester and the false bottom, and in the space between the false bottom and the perforated plates. After the main charge has been expelled from the digester, water under high pressure is supplied to the rotary tube, and, issuing from the jets, washes out any remaining fiber.—A. P.-C.

Digester Control for Maintenance of Uniform Stock. B. H. Moerbeek. *Papierfabr.* 22, 409-410 (Sept. 7, 1924). The importance of digester control is emphasized. Certain conditions which must be fulfilled in the production of a uniform stock are the following: a wood of uniform moisture content and age should be employed, the chip should be of a uniform size, the cooking acid must have constant composition, and the temperature should not vary. The chlorine consumption number test of Sieber was found satisfactory for determining the bleach requirement of the pulp—J. L. P.

Pulp Washer. B. Crocker. U. S. pat. 1,474,893, Nov. 20, 1923. The pulp is fed to a riffler, whence it passes to a flat stationary screen inclined at an angle of about 45°. Sprays of clean water play on to the screen and make the pulp travel down to a box where it is mixed with water and overflows on to a second screen similar to the first, on which it is treated in the same way. Additional similar screens may be provided if desired. The dirty water from the first sections is allowed to go to waste, while the water passing through the last screen is practically clean and is used over again. The screens are preferably made from 80 mesh wire cloth.—A. P.-C.

Pulp Washing Apparatus. N. H. Bergstrom. U. S. pat. 1,498,716, June 24, 1924. The pulp is fed into a semi-cylindrical compartment or trough, and sprayed at the same time. A washing drum is mounted eccentrically in the trough, so that by its rotation it exerts a squeezing or pressing action on the pulp thereby forcing a relatively large proportion of the water into the drum, from which it is removed by buckets. At the same time the pulp is made to travel through a series of three similar troughs with washing drums, being sprayed as it is fed into each successive trough, and also as it leaves the last one.—A. P.-C.

Revolving Knot Screen. Ph. Nebrich vorm. Reinicke & Jasper. Ger. pat. 397,063. *Papierfabr.* 22, 323 (July 13, 1924); *Wochbl. Papierfabr.* 55, 2275 (Sept. 6, 1924). An auxiliary screen, placed within the cylindrical apparatus, is arranged to act as an agitator.—A. P.-C.

Cylindrical Screens. Hoyer. *Papierfabr.* 22, 424-427 (Sept. 14, 1924). A contribution on the technique of cylindrical screen operation as well as a description of the recent advances in screen construction.—J. L. P.

New Knot Screen. Paul Mohn. Ger. pat. 398,042. *Papierfabr.* 22, 359 (Aug. 3, 1924). A new knot screen is described which makes for a more effective separation of the knots and the fibers.—J. L. P.

Choice of a Machine Screen. Karl Micksch. *Wochbl. Papierfabr.* 55, 1883 (July 26, 1924). A brief article on the choice of the mesh for the paper machine wire as required for different kinds of papers.—J. L. P.

New Seam for Endless Metal Screens. J. W. Andr. Kufferath and Co. Ger. pat. 396,763. *Wochbl. Papierfabr.* 55, 2274-2275 (Sept. 6, 1924). A superior method of making seams for machine wires is described.—J. L. P.

Pulp Screen. A. R. Paull. U. S. pat. 1,472,934, Nov. 6, 1923. A screen of polygonal cross section slowly rotates in a vat or casing nearly filled with stock. Radical plates attached to the exterior of the screen and extending practically to the casing divide the space between the screen and casing into a number of compartments, which communicate at their extremities. Inside the screen is a series of plungers, which are given rapid oscillations, thereby drawing the pulp inwardly through the screen, the plungers having suitable perforations to let the stock pass inside them to a suitable outlet. Means are provided for feeding the stock into the casing, and also for removing the screenings at the top of the screen, when the latter is not immersed in the pulp, sprays being used at the same time to clean the surface of the screen plates. This is essentially an improvement on U. S. pat. 1,149,534 of Aug. 10, 1915, covering various details of construction.—A. P.-C.

Pulp Screen. C. Nebrich. Eng. pat. 218,943, July 17, 1924. The screen consists essentially of a non-rotatable straining drum in which pressure or agitation impulses are produced, either individually or simultaneously, in such a way as to act directly on a comparatively small quantity of the stock in the drum.—A. P.-C.

Pulp Screen. John Paramor and Watford Engineering Works, Ltd. Eng. pat. 217,075, June 12, 1924. A screen of suitable shape (flat plate, segment of drum, or trough) is mounted in terminal plates which close the ends of the trough and which are suspended by means of straps embracing eccentrics fixed on a rapidly rotating shaft. The screen is enclosed in a suitable open-top vat. It may be of either inward flow or outward flow type. For cleaning purposes the trough can be rotated about the shaft until it is completely out of the vat. A flexible connecting pipe is provided between the trough and an opening in the vat to serve as inlet for raw stock or outlet for screened stock, according as the screen is outward or inward flow. An important advantage is the elimination of the diaphragms used with ordinary types of flat screens.—A. P.-C.

Apparatus for Removing Impurities from Pulp. H. Thomassen. Fr. pat. 573,036, Nov. 10, 1923. The riffler is more or less efficient, and is generally considered somewhat as a necessary evil. It is eliminated by passing the stock through a drum with a solid (instead of perforated) periphery, which rotates about a vertical axis and which has an inwardly projecting annular flange at the top. The speed is adjusted so that the heavy impurities, such as sand and grit, are thrown against the wall of the drum, whence they are prevented from escaping by means of the annular flange. Lighter impurities gather under a second ring, inside the annular flange, and the purified pulp is discharged at the top of the drum and is sent to the paper machine. By adjusting the feed of pulp into the drum, the amount of stock fed to the paper machine can be instantaneously regulated. Fillers or coloring matter can be added to the stock in the centrifuge, and are thus very uniformly mixed with it.—A. P.-C.

Stock Regulator. A. T. Hilaman. U. S. pat. 1,482,991, Feb. 5, 1924. The principle on which this regulator operates is practically the same as that of regulator covered by U. S. pat. 1,442,272 of Jan. 16, 1923 (see *Paper Trade J.* 79, No. 9, 55, Aug. 28, 1924). The patent provides for various details of construction to ensure even delivery of the pulp into the hopper without splashing on to the sides, and to adjust the feed of the pulp and make the apparatus respond more readily when there is excess or deficiency of stock.—A. P.-C.

Doctor for Paper Machine Press Rolls. A. A. Judd and C. F. Murtaugh. U. S. pat. 1,476,894, Dec. 11, 1923. A suitable hopper is pivitally mounted near the top press roll, and the edge of hopper rests along the press roll and acts as scraper or "doctor." A slidable weighted bar rests on the end edges of the hopper, and the position of the bar regulates the pressure of the scraper on the roll. Water sprays are provided by means of which the pulp scraped off the press roll into the hopper is diluted to such a consistency that it can flow out of a discharge opening in the bottom of the hopper, whence it is returned to the machine chest.—A. P.-C.

Washing of Felts. Anon. *Papierfabr.* 22, 387-388 (Aug. 24, 1924). The importance of felt washing in the paper industry is emphasized. As a washing solution, warm soap solution is generally employed, which is followed by clean warm water, and the felt is dried in the air. The necessity of using wooden wash rolls which are free from splinters, knots, and other irregularities is mentioned.—J. L. P.

Felt Guide from the Couch to the Wet Press Rolls on the Paper Machine. Josef Hrasdira. Ger. pat. 396,834. *Wochbl. Papierfabr.* 55, 2275 (Sept. 6, 1924). The felt is conducted around a roll which presses against the wet press roll and then between wash rolls, which rotate at a speed somewhat less than the press rolls.—J. L. P.

Feltless Wet Press. E. W. Labombarde. U. S. pat. 1,487,245, Mar. 18, 1924. The couch roll is pressed against the cylinder mold by means of springs, and a smaller roll is also pressed against the couch roll by means of springs, in order to remove part of the water. The pulp is removed from the couch by means of a scraping carrier, which automatically cuts off the sheet when it has reached a certain length, delivers it on to the perforated bed of a press, where it is folded over in three and then subjected to great pressure. When the pressure is released the lap is discharged on to a conveyor.—A. P.-C.

Controlling the Tension of Paper Machine Press Felts. E. J. Wilson assignor to F. C. Huyck & Sons. U. S. pat. 1,489,623, Apr. 8, 1924. Each end of the felt carrying rolls is connected to the frame of the machine by means of a suitable spring link, which is deflected or distorted to an extent depending on the tension of the felt. Suitable means are provided for indicating and recording this distortion or deflection, preferably in terms of the tension. It is therefore possible to always adjust the tension, by means of the stretch roll, to the known optimum value for any given set of operating conditions, and also to correct any inequality in the tension at the two edges of the felt, thereby prolonging the life of the felt and at the same time obtaining better operating results.—A. P.-C.

Drier Felt Stretcher. D. L. McCorkindale. U. S. pat. 1,488,929, Apr. 1, 1924. Two vertical guide members are attached to opposite sides of the paper machine frame, and guide blocks are arranged to slide in the guide members. These blocks carry the bearings of the stretch roll. Each block is attached to the end of a chain or cable which is wound around a drum, which is vertically beneath it, and both winding drums are keyed to a common shaft at a suitable distance beneath the drier rolls. An adjustably weighted lever is loosely mounted on the winding drum shaft, and is provided with a spring pressed ratchet or dog to engage a ratchet wheel on the shaft, thereby locking the shaft and lever together and putting the cable connecting the stretch roll bearings and the winding drums under a definite but adjustable tension.—A. P.-C.

Fourdrinier Paper Machine. J. W. Vedder and F. W. Lodding assignors to Rice, Barton & Fales Machine & Iron Co. U. S. pat. 1,477,020, Dec. 11, 1923. The table is constructed so as to permit of adjusting the pitch of the wire while the machine is running. The shake is imparted to the breast roll bearings, the rails remaining stationary. The table rolls are mounted in three sections; and the two sections nearest the suction boxes remain stationary, while the section nearest the breast roll is connected to the bearings of the latter at one end and pivoted at the other. Alternately, the series of table rolls nearest the breast roll, instead of being shaken with the breast roll, are moved endwise, if at all, only insofar as the freedom of their bearings permits, and such movement is imparted by the action of the fourdrinier wire. The frame is constructed so as to prevent vibration due to the shake. The apron is constructed so that adjustment of the height of the breast roll automatically adjusts the height of the apron.—A. P.-C.

Regulating and Controlling the Speed of Papermaking Machines. E. A. Ironside and J. W. Rose. Fr. pat. 568,379. The invention is applicable in the case of hydraulic, pneumatic or steam driven motors. A pump driven by a constant speed motor has suction and pressure pipes connected to each of the motors driving the various sections of the paper machine. A valve in the pressure pipe leading to each of the sectional motors regulates the admission of driving fluid to the motor, and this valve is controlled by suitable means from the shaft of the sectional motor, so that decrease in the speed of the latter opens the valve and increase in speed closes the valve, until the original speed is restored.—A. P.-C.

Buying of Paper Mill Machinery. James A. Cameron. *Paper Mill* 48, No. 31, 10, 12 (Aug. 2, 1924). Brief outline of the merits of Cameron slitting and rewinding machinery.—A. P.-C.

Paper Machine. J. D. Tompkins. U. S. pat. 1,472,572, Oct. 30, 1923. An upper suction couch roll is provided, which is set over the wire a slight distance back from the lower couch, and beneath it is a pipe for delivering a blast of warm air at a temperature of about 100° F. against the wire. On leaving the wire the sheet is carried between two felts, and passes over another suction roll, above which is provided another warm air blast. This ensures maximum removal of water from the sheet, with minimum displacement of fibers, and without having to use excessive pressure at the presses, even when running at high speeds. Under these conditions, one press is sufficient.—A. P.-C.

Paper Machine. J. D. Tompkins. U. S. pat. 1,479,265, Jan. 1, 1924. The machine covered by this patent is very similar to the one provided for in U. S. pat. 1,472,572 (preceding patent). There is an upper suction couch placed on the wire somewhat back of the lower couch, top and bottom press felts, and an intermediate suction roll. But instead of a plain press, a suction press is provided, the lower roll (which is the suction roll) being set slightly back of the upper plain roll, and a blast of warm air being provided to act in conjunction with the suction to effect more thorough and rapid removal of the moisture, and cut down the pressure required at the press, of which there need be only one.—A. P.-C.

Letters of a Paper Maker to His Son. Anon. *Wochbl. Papierfabr.* 55, 1745-1747 (July 12, 1924); 1808-1810 (July 19); 1941-1943 (Aug. 2, 1924); 2005-2008 (Aug. 9); 2069-2073 (Aug. 16); 2136-2138 (Aug. 23); 2333-2336 (Sept. 13, 1924). A continuation of the discussion of the paper machine, with emphasis on the flow of stock and the formation of the sheet; its auxiliary equipment, and the presses.—J. L. P.

Automatic Thickness Regulator for Paper Machines. E. H. Butterfield and F. D. Otterbein assignor to Tom Harvey, Jr. U. S. pat. 1,479,786, Jan. 8, 1924. This patent covers the application of the thickness indicator and recorder described in U. S. pat. 1,453,438 of May 1, 1923 (*Paper Trade J.* 79, No. 8, 52, Aug. 21, 1924) to the automatic regulation of the thickness of the sheet. This is accomplished by connecting the instrument with the head box of the machine so that the amount of stock fed to the machine is increased when the sheet is too thin, and is decreased when it is too thick; or else by connecting the indicator with the engine or motor driving the paper machine, so that the speed is increased or decreased according as the sheet is too thick or too thin.—A. P.-C.

Two Roll or Three Roll News Machines. R. S. Johnson. *Paper* 665-666 (July 31, 1924). A discussion of the relative merits of 146 inch machines running at 1,000 or more ft. per min., and of 230 inch machines running at about 800 ft. per min., based on operations of machines at present installed.—A. P.-C.

How to Run Felts. *Pulp & Paper* 22, 817-818 (Aug. 7, 1924). A compilation of suggestions made by practical paper makers.—A. P.-C.

Regulating Device for Sectional Electrical Paper Machine Drives. Brown Boveri & Co. Fr. pat. 570,665. The device consists essentially in a series of differential gear trains, one for each sectional motor, which operate the regulating devices for the respective motors, each train being driven partly by its own motor and partly by the preceding motor. Any change in the relative speed between two adjacent motors acts on the gears in such a manner as to put in or cut out more resistence in a rheostat in the circuit of the field coils of the motor, thereby bringing the latter back to its original speed.—A. P.-C.

Doll-Head Bearing and Packing Device for Drying Cylinders. W. P. Evans. U. S. pat. 1,482,225, Jan. 29, 1924. The end of the hollow trunnion which is inside the doll-head is partially turned down to a smaller diameter, and the portion which is unreduced is machined to produce a "squared" portion. The remainder of the unreduced portion is supported in a suitable bearing. A recessed sleeve or gland-like element is applied over the prepared end of the trunnion, so that one face of the sleeve makes a smooth and tight joint with the vertical inside face of the roll-head casting (packing being provided if desired), and the sleeve makes an outwardly directed sleeve-like cavity with the reduced portion of the trunnion. The gland element is positively driven by the "squared" portion of the unreduced trunnion. Packing is placed in the sleeve-like cavity, and then a male rotatable gland-like element is introduced into the cavity and is designed so as to be positively driven by the female gland-element. A screwed stud, or similar device, passing through the outside cover plate of the doll head casting allows of adjusting the male gland-element while the machine is running, so as to take up wear in the packing.—A. P.-C.

Regulating the Width of the Sheet on a Cylinder Machine. J. H. Durkin and D. Wilkie. U. S. pat. 1,485,256, Feb. 26, 1924. When the width of the sheet must be less than the full width of the cylinder, sprays are made to play on the edges of the wire just above the level of the stock in the vat, so as to wash back into the vat a strip of the pulp adhering to the wire, and leave just enough to give a sheet of the desired width. The width of the spray (and consequently of the sheet) is adjusted by means of a sleeve fitting fairly tightly over the spray, but which can be slid so as to cover more or less of the spray holes.—A. P.-C.

Drive for Paper Machine Driers. W. S. Crandell assignor to Albany Paper Mill Machinery Co., Inc. U. S. pat. 1,479,128, Jan. 1, 1924. The several drying rolls are driven from a driving shaft extending along the machine close to the trunnions of the drying rolls, each of which is provided with a worm gear meshing with a worm on the shaft. The gears can be about one-fourth to one-fifth the size of the gears which are generally used for driving driers. Each gear and worm is completely enclosed in an easily demountable housing. The driving shaft is made in sections, detachably connected together by means of coupling in such a manner that each section corresponds to one of the driers, thereby permitting the parts associated with each drier to be dissembled as a unit without disturbing the machine as a whole. The upper tier of driers is driven from a similar shaft which in turn is driven from the lower shaft by a chain drive. The calender is also driven from the main drier driving shaft, through a chain, a countershaft, and an adjustable friction cone which permits of altering the speed ratio between the driers and calender.—A. P.-C.

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Conducted by THOS. J. BURKE, C.A., Sec-Treas

The Management Function in Business*

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On account of the extremely wide field covered by the subject of this paper, it will be possible to present only the more outstanding considerations involved in it. By way of introduction it may be pertinent to indicate some of the underlying conditions on which effective management rests and to point out some of the differences between efficient and inefficient management.

The solution of every problem, the making of each decision requires careful and intensive study. Nothing should be left to chance, as the conclusions arrived at must be definite and final. It follows, therefore, that the completeness and accuracy of the statements prepared and submitted as a basis for judgment are of vital importance.

If the only objects in presenting a periodical report of any business were to exhibit the financial results of the period covered, and to provide statistical data, it would usually be sufficient to prepare a statement in short form. The successful solution, however, of problems facing industries demand economy and intensive management, and as intensive management means careful and intelligent attention to detail, it is therefore necessary to adopt analytical accounting methods.

No Place for Chance Experiments

As chance experiments have no place in industry, the importance of plant administration, which in the past has been to a great extent overlooked, is a vital and essential part of all business enterprises. Hitherto manufacturers have too often been content to utilize old-type and wornout machines by making changes thereon which may or may not have proved successful. Instead they should have employed an expert and made use of his scientific knowledge for the express purpose of defining the needs of the plant.

The present call for scientific management is brought about by the changing stages of industry. When hand labor was the method production, it was considered statisfactory as it was plentiful and cheap. Gradually manufacturing processes were revolutionized with the result that output was increased, thereby forcing expansion as the local demand could be more than supplied. The population increased with the betterment effected in economic conditions. This accounts for our large and increasingly populous districts in the Middle West where it has been found that certain articles can be manufactured more economically than in New England States where the industry of this country originated. The changes and advances have been rapid and, though many problems are still facing industry, manufacturing is being conducted in America on a larger scale than in any other country in the world. This situation, of course, has arisen through the development of the country's natural resources, such as oil, timber, coal, iron and other minerals.

Labor and Volume of Production

Labor and volume of production are the two most difficult problems facing the industries of the present day. There is a scarcity of the former i.e. of skilled labor, and until recently there has been a falling off of the latter. The slogan of today is, Produce! Produce! and Produce at low unit cost!!! During the world war when business was in a chaotic condition and tremendous profits were being realized, competition meant little if anything. In the year 1921, and in 1920 also, business practically stopped, prices dropped, and failures ensued. During the succeeding years there has been a considerable number of failures, but this condition was and is insignificant compared with the large number of business houses laboring under financial difficulties. Many large concerns have ceased operations and have not yet been reported as failures, because they have not yet passed through the bankruptcy courts. Such failures, and embarrassments are primarily due to poor and incompetent management, arising often from lack of knowledge or perhaps from some moral defect on the part of the employer.

If the propriety of installing better methods were impressed upon employers, inefficient management might be eliminated to a considerable degree. The employer must think seriously of the work to be performed so that he can the better allocate it to his foremen and they to the workmen. Mental laziness on the part of executives is not conducive to good workmanship. The workman, as a rule is not fond of thinking and will conduct his work with the least possible mental effort, taking his employer as an example. The autocrat who in early days, decreed the performance of certain work, thought little and cared less about the cost of its execution. Slave labor was then prevalent and the life of a slave was of little moment. Consequently the question of expenditure never occurred to the minds of these responsible for carrying on the work—sufficient for them if they fulfilled the autocrat's decree.

Failure to Issue Proper Instructions

Frequently you will find that when a workman does not perform his work in the most effieient manner, no proper instructions have been issued, and, of course, the blame then lies with the executive. In certain shops it has been said that the workman is more capable than those directing the work. This is a manifest misstatement, for workmen have little or no chance of acquiring and applying knowledge such as management has.

* From National Association of Cost Accountants Bulletin.

Contributing Factors

Many factors have contributed to inefficient management, a few of which will be set forth here:

1—Wrong attitude towards employing an executive staff.

The need for an executive staff has been too little realized in the past. No plant can be administered properly unless the management realizes that the so-called non-productive employees and staff are just as essential as the men who produce the goods.

2—Wage payment system.

This is largely a controversial matter, but a great deal of dissatisfaction is invariably found in plants where the workmen are not paid a proper day's wage.

3—Ultra-conservatism in plant management and in the employment of new capital.

It is a common and perhaps a natural weakness on the part of employers to let things run along just as they have been, even though present conditions render old methods unsatisfactory. From their point of view, change means expense (apparently unnecesary). In the case of new inventions they would rather await the result of someone else's experimentation from which, if found to be successful, they may be able to share in the profit without having shared in the expense.

4—Impecunious operating.

No money is expended for the development of efficient administration. Always the attempt is made to conserve, employing unskilled labor, purchasing inferior or faulty material, and cutting wage rates.

The purpose of this preliminary statement has been to emphasize the hopelessness of inefficient management and to point out that when more attention is given to detail, when workmen are treated equitably, and when capital is given free scope, oftentimes "the labor will be forgotten in the joy of finding the reward." The principles of management will now be considered.

The functions of management in business, though numerous, may be grouped under the following general heads:

1—Organizing and Promoting
2—Preparing and Co-ordinating
3—Directing and Controlling

These captions may be further sub-divided. A brief outline of the underlying duties of successful management respecting each one of the foregoing functions will now be given.

Organizing and Promoting

In order to secure capital upon the organization of a large corporation it is customary for the organizers to circularize prospective stockholders and to advertise the sale of capital stock. The circulars, in addition to setting forth the purposes and policies of the corporation, generally supply information relative to the site chosen for the plant, the class of equipment to be selected, and any other general plans. The preparation of data for submission to bankers and others requires careful consideration on the part of the organizers and among other things the following must be considered:

1—The product to be manufactured and the successful marketing of that product in face of prevailing competition.

2—The class of labor to be employed and the facilities for obtaining same.

3—The various problems facing the particular industry and other industries in general.

4—The measure of success attained in the past by similar enterprises.

5—The raw material to be used in the manufacture of the product and the available supply. Also whether or not this raw material is subject to large fluctuations in price.

6—Any other information which will be necessary to convince the interested parties that the organizers have sufficient reason to launch a new enterprise, and that they also have sufficient data to demonstrate that this new enterprise should be successful.

What the Balance Sheet Should Show

Based on a careful consideration of the foregoing factors, estimates should now be prepared and submitted in the form of a balance sheet and a statement of earnings to those from whom financial accommodation is anticipated. The balance Sheet should show:

1—Estimated cost of plant, based on proposed capacity.
2—Cash available for working capital versus proposed loans.
3—The Capital stock to be issued.

The Statement of Earnings should show:

1—Estimated sales based on the normal capacity of the plant after consideration of the existing and potential demand for the product.
2—Estimated cost of manufacturing and marketing the product.
3—Interest payable on loans applied for.

For the purpose of estimating figures to support the Statement of Earnings, careful consideration and study must be given to the various operations which will be required in the process of manufacture and also to the time to be consumed by each operation. This will determine the number of men to be employed.

The cost of marketing will be controlled largely by the proposed size of the executive and clerical staff. This may be arrived at by a careful study of relationship between activities and personnel, including the measurement of authority, the division of duties, the choice of individuals for each particular function, and the co-ordination of each function or agency, whether that be a gang in the shop, a corps in the office, or a stand of machines adapted to a particular process. The task of handling men and women must also be considered together with such problems as energizing the force by use of incentives and a system of promotion within the organization, thereby securing the co-operation of everyone employed.

Preparing and Co-Ordinating

When business was handled by small proprietors, the owner himself performed all of the foregoing functions and he oftentimes was sales and production manager, accountant and financial expert. Today the one-man business has practically disappeared, as industries have grown to such enormous proportions that it is no longer possible for one individual to attend to all details. Hence, we have experts employed to handle the respective units.

After these major functions, mentioned above, have been assigned, the attention of the management should next be directed to the less important functions. Here the assistance of the expert becomes valuable. The underlying principle, in this connection, is to select persons who possess special aptitude for the task to be assigned to them. It is important that such persons should possess talents or aptitudes which give reasonable promise of growth. As a basis for judging the fitness of men for particular positions, it should be noted that the lower the position the more essential is all-around ability. On the other hand, greater preference will be shown to specific training and outstanding ability for the higher appointments.

Records of performance and results obtained by each individual should be furnished by the department heads to the management, and the remuneration based thereon.

In order that each departmental unit may operate satisfactorily, it is necessary that a proportionate share of capital, labor and executive attention be given to each unit. That is, while it is generally accepted that capital and labor go hand in hand, as capital is expended for productive equipment, so should productive labor and executive attention be increased to secure substantially equivalent profitable returns.

To obtain the peak of production, proper coordination between departments, executives, managers and employers is imperative. No plant can be run successfully unless each one considers his co-worker just as essential to production as he is himself, nor unless each one works conscientiously and with the same thought of the end in views and results to be attained. Slave-driving and sweated labor have no place in modern business, and if there is no utilization of the elements of human nature, and no attempt is made to educate

and hold the interest of workers, apart from a natural pecuniary interest, dissatisfaction will invariably arise and the business enterprises will terminate with the inevitable shipwreck.

Directing and Controlling

This brings us now to the third, and as generally viewed, the most important function of management—that is, Directing and Controlling. Here is seen the utility of the systematizer, statistician, auditor, cost accountant, and others engaged in handling productive and financial records.

The manager and also the employer, if alive to present day demands, will call for financial data containing statistics and costs from which he may readily determine the trend of his own business. From his knowledge of the business he should be able to outline the specific data desired. This means installing a suitable system.

The essentials of a good system may be briefly stated thus:

1—Accuracy—By careful study of conditions and needs every precaution must be taken to guard against error.

2—Simplicity—The possibility of innumerable explanations being asked will not arise if the facts are presented in such a way as to enable the manager to obtain the desired information.

3—Effectiveness—The information desired should be easily procurable.

4—Convenience and Adaptability—Frequently it is found that many systems are not sufficiently elastic to meet changes in production methods. This condition should be avoided without violating the general principles of the system which should be capable of quick comprehension by all engaged in compiling the records. There should be a uniform nomenclature or numbering throughout so that the routine will be as progressive as the work itself.

In addition to the foregoing, the cost of installing and operating the system should be considered as compared with the results to be obtained.

When, therefore, it is proposed to install an accounting system for a manufacturing concern, due cognizance having been taken of the prevailing conditions and methods of production, the first questions to be asked are, what facts are required and what purposes are to be served. A system should then be devised which will provide the necessary information in the best and simplest form possible. When every detail has been carefully thought out and revised, the system should be introduced gradually and progressively as results warrant, so that the employees assigned to operate it may have time to familiarize themselves with its details. Suggestions for improvement by such employees should be encouraged, and, if found proper, acted upon; otherwise their hostility may be incurred and the system completely killed.

Cost Should Not Be Unreasonable

While it is impossible to obtain correct and useful records without paying a reasonable cost by avoiding parsimony on the one hand and prodigality on the other, it should be possible to build a system which will be able to give all the desired information without being open to censure on the ground of unreasonable cost.

The system adopted must provide for the controlling of equipment, material, labor, and other expense. This involves an intricate cost system entailing much labor and pains in collating the various items from numerous sources and necessitating the exercise of close supervision.

Cost systems were not recognized as a vital necessity until early in the nineteenth century when the application of machinery to various manufacturing processes became general, and competition made itself felt in all industries. Numerous systems are in operation today, but, despite the multudinous forms and varied dress, all are based upon certain fundamentals sufficiently broad in application to sustain the superstructure of detail erected upon them. The only difference between them (if they are proper systems) is that each one is adapted to the needs of the special business or class of products in which they are employed. Each business, though engaged in the same line of manufacture, is generally conducted under different managerial conditions, and perhaps in different localities, and should therefore have a cost system designed to meet its peculiar requirements.

Compared with ordinary commercial accounting, the beginnings of which are lost in antiquity, cost accounting is but a thing of yesterday; this country of ours being popularly credited as its home, if not its birthplace.

Cost records primarily are devised to reflect what money has been expended in manufacturing a product for sale, the objects being to provide sufficient information to enable the management to ascertain the costs of the different processes of manufacture and, in addition, to provide accurate data for use in estimating for future work. Guidance as to the most remunerative products for preferential manufacture is also obtained. Further, by the use of comparative costs it should be possible to discover promptly any leakages. The reports for this purpose submitted to the management should contain information relative to the source or reason for such leakages.

Material and Labor

In your study of cost accounting you may have heard it said repeatedly that there are only two elements of cost, viz:—Material and Labor. This may be true in the case of articles made wholly by hand, but there are few, if any, manufacturing processes today in which raw materials are converted without the use of tools of some kind. Material and Labor, therefore, may only be regarded as the first stage or prime cost.

The cost of machines and tools necessary for manufacturing a product, as well as the cost of rent, taxes, insurance, heating and lighting the factory, and all other expenses as well form parts of an additional expenditure upon which production is dependent. These must therefore, be dealt with. But since it is evident that these items do not enter into the actual composition of the product itself, they cannot be included in either of the two elements composing prime cost. Hence, it is necessary to introduce a third element, commonly known as burden or overhead. A variety of names might be applied to this element. In Great Britain it is termed "Establishment Charges" and often "Oncost." This third element gives rise to nearly all the problems and difficulties met in Cost Accounting and the complexity is further increased by the numerous subdivisions rendered necessary by the demands for specific and detailed information.

In a modern factory there are materials used and wages paid for labor which do not form part of the finished product. Such expenditure should be classed as "Indirect Material" and "Indirect Labor." These two divisions are most important factors in costs and should be subject to very close scrutiny, as it is possible that items, which under proper supervision would not be allowed, may pass through unnoticed and form a source of serious loss.

It is necessary to select with great care a method of correctly recording materials used and wages paid.

Another Form of Money

You have no doubt been astonished, oftentimes, to find how seldom those who have to do with stores realize that "store material" is just another form of money and that it should therefore be dealt with in the same manner as cash. For example, some storekeepers will issue material to any workman who cares to ask for same, so long as he names a job number against which they can be charged. This is altogether wrong, and as a preventative it is usual to require that no goods shall be issued except against a Material Requisition Form signed by the foreman. These forms are collected daily by the cost clerk and the particulars entered under the respective job numbers. The stores clerk issues a credit slip to the cost clerk for goods issued and returned unused. This latter is most important in the case of spoiled work which forms a much larger expense than is generally supposed and calls for

special watchfulness on the part of the inspector, foreman, or manager. Such work should not be thrown unrecorded on the scrap heap which is usually its ultimate destination—but should be returned to stores so that the job may be credited. Otherwise the job will be charged with a double amount of material.

With reference to direct labor, it will be found that this is a most variable element, due to fluctuations in rates, different classes of workers employed, changes in methods of production, change of conditions, etc. For example, in slack periods the labor costs are always greater, due to the tendency on the part of the workers to delay a job in the hope that another will come along before the one on which they are engaged is finished. And in times of pressure overtime may be found necessary. The method adopted for the proper recording of labor costs should also be carefully considered, as, in the case of spoiled work already mentioned, the cost records would be meaningless if such labor was charged to any particular job.

Detailed explanations of the various cost systems now in force would be tiresome. Enough has been said about cost accounting to show the importance of accurate costs to the successful conduct of a manufacturing business. There remains only a brief statement as to the proper method of using completed costs. These should be compared analytically with the estimates as well as with the previous costs of similar work and any difference should be carefully noted. The conditions under which the work was carried out should also be noted,—that is, whether the job was normal, or was affected by any outside cause, such as urgency due to pressure of time involving overtime, strikes, lock-outs or breakdown. In this way valuable comparative statistics may be compiled. Whether in the form of charts, periodical average percentages or tables, they form a reliable aid to the estimator, who, thus has at hand for ready reference the necessary data for guidance in preparing estimates for future work. To the manager or principal of the business they reveal the weak spots in manufacture or management and afford the opportunity of revising the methods of production or curtailing unnecessary expenditure.

Periodical Report Should Be Made

When the system is in working order, a periodical report should be submitted to the operating executive, reflecting in a comprehensive manner, all that has been done and the various conditions met with during the period covered by the report. The Operating Statement should clearly exhibit the cost of labor and of material used classified under the natural subdivisions of the work performed. The Balance Sheet should show in detail the true financial condition of the business and at the same time should be an historical narrative of the enterprise. The value to be derived from a Balance Sheet depends in a large measure on the time given to a consideration of it—the more you put into it the more you can get out of it.

Distinctions between capital and operating expenditures must be carefully watched in the preparation of financial reports. In certain enterprises such as oil, timber, and mining, experience teaches us that the division line, if there be any, is extremely narrow. Such wasting enterprise, after they have been developed and equipped to their contemplated or possible capacity, are constant consumers of equipment which is subject to wear and tear. All appliances must be kept in proper repair to do their work if output is to be maintained.

Hauling equipment is constantly being worn out and has to be replaced. As development increases, the greater is the expense necessary for replacements and repairs. Also, with exhaustion more communication lines are necessary to maintain output. As a rule these lines remain in place until the exhausfion is complete, at which time the remaining scrap value, if there be any, is relatively small. That such expenditures constitute operating rather than capitalizable expense is based on the fact that they are continually recurrent and are practically fixed factors in the cost of production per unit from year to year. Doubtless your first thought is, "How does this affect taxable income" and rightly too, for in these days it behooves each one of us to consider everything from a tax point of view. It makes no difference to taxable income whether such items are charged immediately to operating expense or written off by deductions for depreciation. It is better, as a practical solution, to dispose of such expense by charging direct to operating expense rather than to become involved in refined but vexatious accounting, necessary in the readjustment and compounding of depreciation rates when such expenditures are capitalized.

Summary of the Principles

The following quotation from Mr. G. Charter Harrison's book entitled, "Cost Accounting to aid Production" provides a fitting summary of the principles set forth above:

"The modern purchasing agent more or less unconsciously applies the principles of scientific management. Instead of buying coal by the ton, he purchases fuel according to heat units. Instead of buying any kind of belting, or the cheapest, he purchases this according to specifications drawn up after careful tests. Steel is purchased by analysis. The modern purchasing agent is as well posted as to the sources of supply and the cost of production of his major items of purchase as the modern sales manager is as to the field of distribution and the cost of marketing his own product.

"The efforts which are made by the treasurer, the sales manager, and the purchasing agent to predetermine results are an indication of the tendency of business to look ahead, of the change of viewpoint of the entrepreneur from retrospection to prospection. The benefits which should be derived from these efforts are greatly curtailed, however, owing to the absence of centralization and co-ordination.

"Strictly speaking, there is no such thing as an interdepartmental problem; factors influencing the plans of one department of a business must also directly or indirectly affect the plans of the other departments. The treasurer's forecasts of collections are based upon the sales manager's estimates of sales and anything which affects the latter's plans must also influence those made by the former. The estimates of sales made by the sales manager are dependent upon the deliveries which can be made by the factory and accordingly any circumstance which affects the productive capacity in like manner influences the plans of the sales manager and of the treasurer.

"There is one department which should be in a position to coordinate the efforts of all other departments, this is the accounting—the one department which in the average business has not kept abreast of the general advances. When all other departments are looking into the future the outlook of the accounting department is still confined to what has happened and its work to the compilation of records of past events."

Grays Harbor Paper Co. to Organize

[FROM OUR REGULAR CORRESPONDENT]

ABERDEEN, Wash., April 23, 1925.—Announcement is made of the organization of the Grays Harbor Pulp and Paper Company, capitalized at $1,500,000. It is the plan of the organization to erect immediately a pulp and paper mill on a site near the city of Montesano, 12 miles east of Aberdeen.

Announcement of the plans was made by D. P. Boles, representing the Seattle interest who will build the plant and by W. E. Johnson, secretary of the Aberdeen Chamber of Commerce. Construction is to start in 30 days, the announcement says.

The mill will employ about 100 operatives at the outset, it is said, and this number will be increased to 300 or 400 when the plant is fully developed. The plan provides that $250,000 of the capital stock will be released for subscription in the Grays harbor district and part of this already has been subscribed.

The mill will manufacture all grades of tissue paper and ground wood pulp. It will use all grades of Grays Harbor woods, except fir, and in particular will use large quantities of hemlock, alder, cottonwood and tideland spruce.

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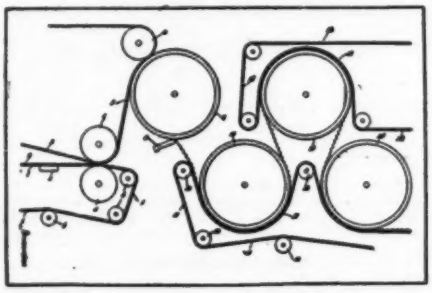

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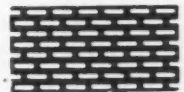

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PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending February 28, 1925, and for the Eight Months Ended February 28, 1925, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER.

Paper and Manufactures of	February 1924 Quantity	February 1924 Value	February 1925 Quantity	February 1925 Value	Eight Months Ending February 28 1923 Quantity	Eight Months Ending February 28 1923 Value	Eight Months Ending February 28 1924 Quantity	Eight Months Ending February 28 1924 Value
Paper, except printed matter (total)	.....	$9,446,214	.....	$9,201,307	.....	$77,943,245	.....	$77,344,738
Printing paper—								
Standard news print.....lbs..free	206,859,570	8,044,932	221,883,699	7,988,410	1,756,973,927	66,371,088	1,812,162,471	66,362,184
Imported from—								
Finland	7,026,639	238,076	4,198,451	128,462	46,126,215	1,560,607	44,161,899	1,408,844
Germany	9,154,966	284,738	3,478,171	104,578	75,020,907	2,455,268	34,646,552	1,039,699
Netherlands	4,233	117	.....	.....	235,593	7,642	1,017,960	33,103
Norway	1,577,175	56,733	3,239,594	103,543	33,651,948	1,167,576	29,785,492	934,079
Sweden	4,775,977	157,906	7,936,628	239,574	81,091,442	2,638,420	105,669,811	3,304,654
Canada	183,750,628	7,288,515	202,270,533	7,388,405	1,515,436,380	58,370,204	1,583,910,751	59,213,024
Other countries	569,952	18,847	760,322	23,848	5,411,442	171,371	12,970,006	428,781
All other, n. e. s.....lbs..dut.	1,840,420	81,086	1,757,395	76,939	12,370,835	583,380	16,935,251	749,478
Grease-proof and water-proof papers.lbs..dut.	239,695	22,586	91,224	11,541	2,100,217	196,263	762,629	91,172
Wrapping paper.....lbs..dut.	.....	.....	.....	.....	[1]44,709,325	[1]1,939,824	.....	.....
Kraft wrapping paper.....lbs..dut.	3,976,420	146,332	1,606,566	65,983	[2]6,859,156	[2]256,067	14,551,910	590,234
All other, wrapping paper.....lbs..dut.	1,800,021	67,929	1,012,235	41,261	[2]4,076,406	[2]151,396	10,139,109	412,084
Writing, drawing, bond, etc.....lbs..dut.	204,117	37,047	200,215	40,713	1,952,757	355,264	2,026,916	478,514
Surface coated.....lbs..dut.	187,509	36,711	132,151	41,577	859,190	198,865	1,379,243	330,060
Tissue paper.....lbs..dut.	229,197	93,611	272,983	112,660	1,477,910	593,340	1,753,641	706,302
Paper boards—								
Pulp boards in rolls.....lbs..dut.	6,711,317	189,257	6,383,888	171,084	50,264,759	1,440,242	44,184,136	1,206,797
Other paper boards, n. e. s.....lbs..dut.	3,000,619	74,067	2,598,598	61,521	16,882,510	486,659	20,853,183	481,726
Cigarette paper, cigarette books and covers.....lbs..dut.	845,302	182,346	277,028	76,680	6,753,317	1,701,541	6,470,807	1,844,424
Photographic paper.....lbs..dut.	211,304	42,898	264,443	59,837	1,785,424	370,916	1,851,273	392,920
Hanging paper.....lbs..dut.	1,697,306	80,179	605,164	55,512	10,508,850	456,075	8,015,856	388,779
Paper boxes.....lbs..dut.	96,266	60,557	231,378	149,943	[2]208,491	[2]135,258	1,493,244	988,941
Decalcomania, not printed.....lbs..free	52,212	12,910	62,068	14,611	254,673	64,192	378,556	89,725
All other.....dut.	.....	273,766	.....	233,035	.....	2,642,875	.....	2,231,398
Books and other printed matter (total)	.....	590,828	.....	784,952	.....	5,877,375	.....	7,322,951
Books and pamphlets in foreign languages.....lbs..free	141,161	101,555	138,649	95,609	1,284,529	703,177	1,577,203	1,046,450
Books, maps, music, etc., 20 years old.....lbs..free	14,192	13,282	14,346	121,137	222,084	935,715	250,923	1,545,393
Other books, etc.....lbs..free	197,352	124,435	192,304	132,638	1,424,010	939,149	1,618,253	1,271,765
Books, pamphlets and music, n. e. s.lbs..dut.	300,984	181,315	334,595	223,509	2,347,158	1,627,436	2,219,858	1,643,811
Maps, charts, and other printed matter, n. e. s.....[3]dut.	.....	61,747	.....	82,565	.....	529,897	.....	606,612
Lithographically printed matter, n. e. s.—								
Cigar bands, labels and flaps.....lbs..dut.	11,672	12,314	10,027	12,673	165,669	147,860	58,622	82,310
Decalcomanias.....lbs..dut.	22,519	29,765	22,376	33,452	158,136	225,317	169,973	250,609
All other.....dut.	.....	66,415	.....	83,369	.....	768,824	.....	876,001

CRUDE PAPER STOCK.

Rags for paper stock.....lbs..free	31,440,555	665,987	57,351,538	1,675,992	254,715,523	4,674,016	397,805,857	10,319,201
Waste bagging, waste paper, etc...lbs..free	7,910,540	91,223	10,732,444	174,198	64,633,952	787,897	80,285,530	1,071,490
Old rope and all other paper stock.lbs..free	7,490,548	413,373	5,040,290	273,829	61,926,917	3,079,719	56,527,876	3,021,536

WOOD PULP.

Mechanically ground wood pulp..tons..free	15,747	525,839	24,607	781,336	175,606	6,169,828	174,808	5,583,758
Chemical wood pulp—								
Sulphite, unbleached.....tons..free	60,289	3,426,361	44,739	2,380,066	331,756	19,887,579	434,598	22,991,393
Sulphite, bleached.....tons..free	21,361	1,745,408	27,795	2,131,683	157,294	13,547,840	208,809	15,566,413
Total sulphite.....tons	81,650	5,171,769	72,534	4,511,749	489,050	33,435,419	643,407	38,557,806
Imported from—								
Finland	8,565	487,133	5,689	309,015	36,018	2,239,597	36,706	1,881,431
Germany	3,954	256,978	6,094	366,456	38,974	2,737,964	59,235	3,445,746
Norway	5,082	348,752	6,681	519,580	38,133	3,120,328	49,214	3,416,271
Sweden	40,191	2,369,123	21,601	1,239,362	170,942	11,024,035	249,539	13,850,491
Canada	23,146	1,660,681	28,289	1,843,178	191,931	13,743,416	225,618	14,637,950
Other countries	712	49,102	4,180	234,158	13,052	570,079	23,095	1,325,917
Sulphate pulp, unbleached (kraft pulp).....tons..free	28,472	1,694,276	20,206	1,166,314	174,895	11,232,949	211,922	11,877,697
Imported from—								
Finland	850	42,428	1,266	66,436	5,739	347,798	10,026	487,383
Norway	655	39,559	779	41,583	6,459	413,930	9,254	498,074
Sweden	16,096	913,105	6,659	349,973	74,562	4,526,659	110,023	5,736,783
Canada	10,637	685,883	11,360	700,567	86,379	5,824,670	79,261	4,978,943
Other countries	234	13,301	142	7,755	1,756	119,892	3,358	176,514
Sulphate pulp, bleached.....tons..free	751	42,837	351	25,911	5,771	396,931	29,724	1,652,949
Other pulp.....tons..free	59	5,559	108	10,581	5,705	349,200	1,171	77,038

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.

Colors, dyes, stains, color acids, and color basis, n. e. s.....lbs..dut.	277,980	346,453	425,172	565,709	2,054,983	2,806,949	2,887,116	3,929,642
Imported from—								
France	3,860	6,499	3,796	7,935	137,513	225,927	72,589	108,008
Germany	114,045	124,971	217,548	286,030	1,004,949	1,246,594	1,494,961	2,124,387
Italy	14,921	17,860	29,194	33,349	134,570	187,679	112,467	156,095
Switzerland	135,043	183,583	111,961	164,731	611,966	940,227	886,812	1,184,081

[1] July 1 to Dec. 31, 1923. [2] Beginning Jan. 1, 1924.

(*Continued on page 60*)

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PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 58*)

Paper and Manufactures of	February 1924 Quantity	February 1924 Value	February 1925 Quantity	February 1925 Value	Eight Months Ending February 28 1923 Quantity	Eight Months Ending February 28 1923 Value	Eight Months Ending February 28 1924 Quantity	Eight Months Ending February 28 1924 Value
United Kingdom	3,630	$4,352	17,574	$17,762	55,466	$62,536	97,774	$9[illegible],385
Other countries	6,481	9,188	45,099	55,902	110,519	143,986	222,513	264,686
Casein or lactarine....lbs..dut.	861,272	69,399	1,502,168	114,795	9,785,716	1,359,103	10,957,544	785,731
Kaolin, china, and paper clay....tons..dut.	34,082	360,289	35,467	343,921	180,500	1,902,690	201,144	1,999,868
EXPORTS—PAPER								
Paper, except printed matter (total)	.....	$1,967,470	.....	$1,595,641	.....	$16,052,290	.....	$15,213,256
Printing paper—								
Newsprint paper ....lbs.	2,812,069	149,354	3,749,093	175,262	21,174,401	1,072,027	22,602,950	1,125,937
Exported to—								
Canada ....lbs.	72,478	6,150	94,610	7,369	792,772	64,206	522,881	39,468
Central America ....lbs.	62,584	3,048	106,624	5,383	725,674	35,205	471,997	26,355
Mexico ....lbs.	214,341	11,548	142,779	6,371	1,024,812	55,962	1,283,377	66,798
Cuba ....lbs.	1,396,869	64,993	1,781,692	75,288	12,287,520	563,642	10,205,285	440,257
South America ....lbs.	207,201	11,127	910,375	47,504	1,255,824	68,013	4,144,075	206,101
Japan ....lbs.	158,055	10,979	73,909	4,782	1,036,880	66,902	264,681	19,908
Philippine Islands ....lbs.	357,828	17,818	514,146	23,073	2,731,575	132,844	2,933,660	135,939
Other countries ....lbs.	342,713	23,691	124,958	5,492	1,319,344	85,253	2,776,994	191,111
Book paper, not coated ....lbs.	929,384	113,069	1,038,106	117,459	14,878,665	1,702,195	13,221,935	1,428,950
Exported to—								
United Kingdom ....lbs.	62,087	11,008	8,353	1,354	488,288	92,943	279,929	60,508
Canada ....lbs.	229,915	27,411	128,242	15,100	1,315,872	169,137	989,780	123,888
Central America ....lbs.	23,910	2,174	29,092	3,165	526,219	64,272	402,922	43,936
Mexico ....lbs.	67,779	8,229	179,320	19,465	963,634	117,312	1,727,212	191,758
Cuba ....lbs.	139,741	16,978	173,944	20,246	3,126,798	344,147	2,701,132	278,824
Argentina ....lbs.	18,781	2,355	18,316	3,524	511,324	71,288	394,791	43,714
Brazil ....lbs.	15,294	2,168	28,150	3,494	398,338	46,069	244,680	30,690
Venezuela ....lbs.	9,565	1,257	27,336	2,808	334,721	35,997	279,219	31,816
Other South America ....lbs.	39,605	5,842	81,158	7,923	803,118	100,055	894,293	98,761
China ....lbs.	4,975	554	46,061	6,941	2,121,229	204,886	3,328,421	302,461
Japan ....lbs.	43,564	4,663	46,682	4,627	1,194,272	116,262	179,725	19,134
Philippine Islands ....lbs.	84,628	7,586	162,584	14,806	1,578,706	147,497	845,966	81,642
Australia ....lbs.	109,536	11,954	42,177	5,321	641,086	83,938	340,997	37,996
Other countries ....lbs.	80,004	10,890	66,691	8,685	875,060	108,392	612,868	83,822
Cover paper ....lbs.	42,878	9,685	96,033	19,406	706,484	126,135	651,820	126,141
Grease proof and waterproof paper....lbs.	136,020	12,105	122,052	13,416	1,171,015	150,421	943,130	110,830
Wrapping paper—								
Kraft paper ....lbs.	51,329	6,297	29,817	3,035	635,797	64,318	365,210	39,622
Other wrapping ....lbs.	1,921,619	174,241	1,938,250	156,686	15,740,847	1,320,301	16,660,508	1,285,092
Surface-coated paper ....lbs.	207,912	38,256	85,716	16,759	2,370,127	370,599	2,154,698	305,909
Tissue and crêpe paper ....lbs.	182,001	48,553	259,223	69,132	2,276,528	592,718	2,202,100	602,771
Toilet paper ....lbs.	347,686	41,502	251,501	27,500	2,699,839	306,565	2,821,283	343,788
Paper towels and napkins ....lbs.	70,299	12,329	58,862	11,080	817,020	142,217	844,941	139,417
Box board ....lbs.	.....	.....	726,471	25,393	.....	.....	[1]1,496,908	[1]57,220
Bristols and bristol board ....lbs.	56,631	5,379	104,496	13,530	985,979	88,682	526,140	65,929
Other paper board and strawboard....lbs.	6,532,770	287,940	1,876,869	99,470	41,982,283	1,870,971	38,278,581	1,461,179
Sheathing and building paper ....lbs.	299,117	13,471	781,197	34,248	2,754,000	129,729	6,906,532	333,527
Wall board of paper or pulp ....Sq. ft.	1,967,736	60,382	764,261	27,056	13,730,867	483,425	9,932,662	350,704
Blotting paper ....lbs.	196,022	24,669	210,597	24,445	[1]453,114	[1]55,313	1,718,114	204,008
Filing folders, index cards, and other office forms ....lbs.	27,710	14,474	48,267	15,668	[1]62,860	[1]26,930	317,423	103,211
Papeteries (fancy writing paper)....lbs.	19,626	8,536	29,943	9,803	263,959	108,536	332,784	112,933
Other writing paper ....lbs.	335,211	56,242	267,027	39,937	3,964,016	682,181	2,377,059	373,025
Cigarette paper and books....lbs.	110,523	37,579	15,560	5,190	592,433	189,330	337,437	115,200
Photographic paper ....lbs.	102,356	101,292	108,579	78,678	963,701	876,141	1,036,568	924,220
Paper hangings (wall paper) ....yards	4,018,225	106,796	3,997,314	88,551	17,117,840	418,019	16,462,229	391,687
Paper bags ....lbs.	810,869	92,237	745,272	64,368	5,237,104	587,427	7,161,912	614,643
Boxes and cartons ....lbs.	929,853	80,521	733,332	65,820	7,202,116	713,793	8,620,362	771,448
Carbon paper ....lbs.	82,013	62,928	64,891	54,784	575,868	445,313	568,934	460,633
Envelopes ....lbs.	206,344	43,233	150,976	29,397	1,812,909	370,910	1,655,033	314,265
Cash register and adding machine paper..lbs.	90,650	11,583	121,062	11,507	862,215	97,978	862,698	89,818
Other paper and paper products....lbs.	2,221,612	354,817	1,859,090	298,061	18,764,473	3,060,116	28,224,902	2,961,149
Books, maps, pictures, and other printed matter (total)	.....	1,515,086	.....	1,438,407	.....	13,159,822	.....	13,131,261
Books and pamphlets ....lbs.	2,515,141	800,950	3,002,649	741,919	19,677,370	6,447,692	23,697,920	6,448,663
Maps and charts ....lbs.	20,572	14,385	14,522	20,036	104,036	105,222	135,280	127,805
Music in books or sheets ....lbs.	45,375	26,859	38,015	22,946	424,021	245,006	427,754	258,699
Souvenir post cards ....lbs.	32,368	16,522	50,786	18,854	413,192	165,418	262,858	145,902
Lithographically printed matter, except post cards and maps ....lbs.	138,432	83,883	183,539	109,184	1,384,765	1,018,261	1,711,995	1,191,418
Playing cards ....packs	891,985	78,491	618,094	66,228	4,988,765	549,693	4,674,487	493,032
Other printed matter ....lbs.	1,605,941	493,996	1,358,686	459,240	13,136,138	4,628,530	12,548,500	4,465,742
WOOD PULP AND PAPER STOCK.								
Sulphite wood pulp ....tons	1,300	77,537	1,951	105,288	10,056	577,809	15,064	897,550
Soda wood pulp ....tons	18	1,653	137	13,911	1,008	95,637	1,203	114,877
Other wood pulp ....tons	166	8,215	698	162,553	2,372	128,853	5,905	684,228
Rags, and other paper stock....lbs.	10,784,239	186,663	10,642,515	179,073	84,113,330	1,385,490	82,947,981	1,349,196
PAPER AND PULP MILL MACHINERY.								
Paper and pulp mill machinery....lbs.	379,795	110,694	221,652	54,427	6,885,351	1,350,734	5,401,123	1,131,720

[1] Jan. 1 to Feb. 28.

[2] July 1 to Dec. 31.

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NEW YORK IMPORTS

WEEK ENDING APRIL 25, 1925

SUMMARY

News print .....151 bls., 1,555 rolls
Printing paper .....453 cs., 136 rolls
Wall paper .....25 bls., 32 cs., 102 rolls
Wrapping paper .....14 rolls, 2 cs.
Drawing paper .....47 cs.
Cigarette paper .....166 cs.
Writing paper .....15 cs.
Paper hangings .....9 bls., 5 cs.
Filter paper .....11 cs., 5 bls.
Packing paper .....4 cs.
Photo paper .....2 cs.
Colored paper .....27 cs.
Surface coated paper .....89 cs.
Paper tubes .....6 cs.
Copy paper .....3 cs.
Parchment paper .....4 cs.
Silk paper .....5 cs.
Note paper and envelopes .....394 cs.
Paraffine paper .....1 cs.
Tissue paper .....6 cs.
Miscellaneous paper .....190 cs.

CIGARETTE PAPER

Standard Products Corp., Liberty, Havre, 90 cs.
Liggett & Myers Tobacco Co., Liberty, Havre, 20 cs.
P. J. Schweitzer, Pres. Adams, Marseilles, 56 cs.

WALL PAPER

F. J. Emmerich Co., Doric, Liverpool, 4 bls.
F. J. Emmerich Co., A. Ballin, Hamburg, 4 bls.
G. J. Hunken Co., A. Ballin, Hamburg, 90 bls.
R. F. Downing & Co., Minnewaska, London, 4 bls.
W. H. S. Lloyd & Co., Mississippi, London, 6 bls.
W. H. S. Lloyd & Co., Mississippi, London, 13 cs.
A. C. Dodman, Jr., Inc., Homeric, Paris, 7 cs.
Janeway & Carpender, Carlsholm, Kotka, 102 rolls.
Schencker & Co., Liberty, Havre, 2 cs.
Whiting & Patterson Co., Inc., Aquitania, Havre, 10 cs.

PAPERHANGINGS

A. C. Dodman, Jr., Inc., Doric, Liverpool, 4 cs.
W. H. S. Lloyd & Co., Minnewaska, London, 1 cs.
W. H. S. Lloyd & Co., Minnewaska, London, 9 bls.

NEWS PRINT

Maurice O'Meara Co., A. Ballin, Hamburg, 151 bls.
Parsons & Whittemore, Inc., Lutzow, Bremen, 158 rolls.
Parsons & Whittemore, Inc., Carlsholm, Kotka, 1,397 rolls.

PRINTING PAPER

B. F. Drakenfeld & Co., Laconia, Liverpool, 2 cs.
E. Dietgen & Co., A. Ballin, Hamburg, 1 cs.
H. Reeve Angel & Co., Inc., Mississippi, London, 6 cs.
C. B. Harris, Carlsholm, Kotka, 53 cs.
Maurice O'Meara Co., Carlsholm, Kotka, 251 cs.
Maurice O'Meara Co., Carlsholm, Kotka, 115 rolls.
L. Schulman, Carlsholm, Kotka, 86 cs.
R. Wilson Paper Corp., Galtymore, Leith, 21 rolls.
Carl Steiner, Rotterdam, Rotterdam, 54 cs.

WRAPPING PAPER

F. C. Strype, Montana, Antwerp, 2 cs.
F. C. Strype, Montana, Antwerp, 14 rolls.

PACKING PAPER

Hensel, Bruckman & Lorbacher, Rotterdam, Rotterdam, 4 cs.

PAPER TUBES

H. A. Maguin Co., Paris, Havre, 6 cs.

DRAWING PAPER

Keuffel & Esser, Verentia, London, 2 cs.
F. C. Strype, Paris, Havre, 20 cs.
F. C. Strype, Eglantine, Rotterdam, 25 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnewaska, London, 7 cs.
H. Reeve Angel & Co., Inc., Mississippi, London, 4 cs.
A. Giese & Son, A. Ballin, Hamburg, 5 bls.

SURFACE COATED PAPER

P. C. Zuhlke, Montana, Antwerp, 67 cs.
Gevaert Co. of America, Montana, Antwerp, 22 cs.

COPY PAPER

H. C. Davison & Co., Taketoyo, Maru Kobe, 3 cs.

PARCHMENT PAPER

Hensel, Bruckman & Lorbacher, Westerdyk, Rotterdam, 4 cs.

COLORED PAPER

P. H. Petry & Co., Westerdyk, Rotterdam, 17 cs.
P. H. Petry & Co., A. Ballin, Hamburg, 8 cs.
Atlantic Forwarding Co., A. Ballin, Hamburg, 2 cs.

SILK PAPER

S. Gilbert, Westerdyk, Rotterdam, 5 cs.

WRITING PAPER

Guibout freres, Paris, Havre, 4 cs.
Guibout freres, Aquitania, Havre, 11 cs.

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A. Goodman & Co., Laconia, Liverpool, 394 cs.

PARAFFINE PAPER

Gevaert Co. of America, Montana, Antwerp, 1 cs.

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J. J. Gavin, Doric, Liverpool, 2 cs.

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F. C. Strype, Laconia, Liverpool, 4 cs.
Electric Specialty Co., Laconia, Liverpool, 2 cs.

MISCELLANEOUS PAPER

Steiner Paper Co., Westerdyk, Rotterdam, 85 cs.
F. C. Strype, Westerdyk, Rotterdam, 11 cs.
Baldwin Universal Co., Minnewaska, London, 2 cs.
F. L. Kraemer & Co., Mississippi, London, 2 cs.
Hudson Forwarding Co., Paris, Havre, 5 cs.
Hensel, Bruckman & Lorbacher, Paris, Havre, 6 cs.
Standard Products Corp., Paris, Havre, 30 cs.
J. I. Bernitz, Eglantine, Rotterdam, 49 cs.

RAGS, BAGGINGS, ETC.

A. W. Fenton, Inc., West Nosska, Cardiff, 121 bls. rags.
Brown Bros. & Co., West Nosska, Dublin, 98 bls. waste paper.
S. Green, C. Mambi, Santiago, 15 bls. rags.
B. D. Kaplan, Laconia, Liverpool, 7 bls. rags.
Brown Bros. & Co., Dorelian, Manchester, 45 bls. new cuttings.
True & McClelland, Dorelian, Manchester, 24 bls. cotton waste.
Royal Manufacturing Co., Dorelian, Manchester, 32 bls. cotton waste.
Equitable Trust Co., Dorelian, Manchester, 82 bls. bagging.
National City Bank, Dorelian, Manchester, 53 bls. rags.
E. J. Keller Co., Inc., Dorelian, Manchester, 90 bls. bagging.
B. D. Kaplan, Dorelian, Manchester, 22 bls. rags.
J. Cohen Son Co., Inc., Dorelian, Manchester, 29 bls. rags
E. Butterworth & Co., Inc., Westerdyk, Rotterdam, 99 bls. bagging.
W. Steck & Co., Westerdyk, Rotterdam, 77 bls. new cuttings.
The Stone Bros. Co., Inc., Westerdyk, Rotterdam, 16 bls. rags.
J. Cohen Son Co., Inc., Verentia, London, 40 bls. rags.
Brown Bros. & Co., Minnewaska, London, 26 bls. rags.
Castle & Overton, Inc., A. Ballin, Hamburg, 15 bls. rags.
Salomon Bros. & Co., A. Ballin, Hamburg, 52 bls. rags.
Salomon Bros. & Co., Asia, Marseilles, 246 bls. rags.
Salomon Bros. & Co., Masaniello, Marseilles, 100 bls. rags.
E. J. Keller Co., Inc., Lutzow, Bremen, 55 bls. bagging.
E. J. Keller Co., Inc., Lutzow, Bremen, 135 bls. rags.
Salomon Bros. & Co., Westphalia, Hamburg, 5 bls. old stockings.
Salomon Bros. & Co., Suffren, Havre, 33 bls. jute.
Equitable Trust Co., Mississippi, London, 52 bls. waste paper.
Castle & Overton, Inc., Oscar II, Copenhagen, 84 bls. rags.
Salomon Bros. & Co., Pittsburgh, Antwerp, 36 bls. threads.
Salomon Bros. & Co., Sardinian Prince, Rio, 61 bls. rags.
Salomon Bros. & Co., Helen, Marseilles, 64 bls. rags.
The Stone Bros. Co., Inc., Galtymore, Leith, 66 bls. bagging.
Furness, Withy & Co., Galtymore, Belfast, 162 bls. paper stock.
A. W. Fenton, Inc., Galtymore, Belfast, 177 bls. paper stock.
Salomon Bros. & Co., Mt. Clay, Hamburg, bls. old stockings.
A. W. Fenton, Inc., Fluor Spar, Leith, 45 bls. rags.
Salomon Bros. & Co., Fluor Spar, Leith, 206 bls. jute.
M. Wolfer, Siboney, Havana, 70 bls. rags.
Hartig Pulp Co., Eglantine, Rotterdam, 36 bls. rags.
E. J. Keller Co., Inc., Eglantine, Rotterdam, 410 bls. rags.
E. J. Keller Co., Inc., Eglantine, Rotterdam, 419 bls. bagging.
Castle & Overton, Inc., Eglantine, Rotterdam, 40 bls. rags.
A. W. Fenton, Inc., Eglantine, Rotterdam, 181 bls. rags.
V. Galaup, Liberty, Havre, 17 bls. rags.
E. J. Keller Co., Inc., Liberty, Havre, 822 bls. rags.
G. W. Millar Co., Liberty, Dunkirk, 52 bls. rags.
W. Hughes & Co., Liberty, Dunkirk, 23 bls. rags.
R. Bishop Mfg. Co., Liberty, Dunkirk, 160 bls. rags.
Castle & Overton, Inc., Liberty, Dunkirk, 141 bls. rags.
Castle & Overton, Inc., City of Eureka, Genoa, 27 bls. rags.
Katzenstein & Keene, Inc., Athenia, Glasgow, 42 bls. bagging.
W. Schall & Co., Montana, Antwerp, 84 bls. bagging.
Salomon Bros. & Co., Fluor Spar, Leith, 206 bls. jute.
Atlas Waste Mfg. Co., Tak. Maru, Kobe, 20 bls. rags.
E. J. Keller Co., Inc., Floridian, Kobe, 650 bls. rags.
E. J. Keller Co., Inc., Westphalia, Hamburg, 730 bls. rags.
E. J. Keller Co., Inc., Westphalia, Hamburg, 49 bls. bagging.
E. J. Keller Co., Inc., Caucasier, Antwerp, 76 bls. bagging.
E. J. Keller Co., Inc., Caucasier, Antwerp, 130 bls. rags.

OLD ROPE

Castle & Overton, Inc., Oscar II, Copenhagen, 20 bls.
E. J. Keller Co., Inc., Westphalia, Hamburg, 220 bls.
Brown Bros. & Co., A. Ballin, Hamburg, 68 coils.
Brown Bros. & Co., Rotterdam, Rotterdam, 80 coils.
Brown Bros. & Co., Rotterdam, Rotterdam, 37 bls.
Brown Bros. & Co., Rotterdam, Rotterdam, 73 pgs.
Equitable Trust Co., Westerdyk, Rotterdam, 289 coils.

MANILA ROPE

Republic Bag & Paper Co., President Adams, Manila, 550 coils.
Grinnel Mills, President Adams, Manila, 75 coils.
Disbrow Cordage Co., President Adams, Manila, 528 coils.

(Continued on page 64)

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Imports of Paper and Paper Stock

(*Continued from page 62*)

Brown Bros. & Co., Montana, Antwerp, 87 bls.

CASEIN

The Karolith Co., Homeric, Bordeaux, 67 bags.

WOOD PULP

Castle & Overton, Inc., A. Ballin, Hamburg, 130 bls. wood pulp, 27 tons.

I. L. Beebe & Co., Inc., Orduna, Hamburg, 130 bls. wood pulp.

E. M. Sergeant & Co., Oscar II, Copenhagen, 399 bls. wood pulp.

J. Anderson & Co., Ohio, Hamburg, 275 bls. wood pulp.

Tidewater Paper Mills, Bornholm, Weymouth, N. S., 11,754 bls. wood pulp.

International Accep. Bank, Eglantine, Rotterdam, 970 bls. wood pulp, 210 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Ohio, Hamburg, 1,505 bls.

Lagerloef Trading Co., Carlsholm, Kotka, 544 bls.

BALTIMORE IMPORTS

WEEK ENDING APRIL 25, 1925

Perkins, Goodwin & Co., Navada, Oslo, 1,050 bls. wood pulp.

Irving Bank Columbia Trust Co., Navada, Oslo, 175 bls. wood pulp.

The Borregaard Co., Inc., Navada, Oslo, 645 bls. wood pulp.

United States Glass Co., Navada, Oslo, 411 bls. wood pulp.

Johanson, Wales & Sparre, Inc., Navada, Copenhagen, 625 bls. wood pulp.

Buck, Kiaer & Co., Navada, Copenhagen, 600 bls. wood pulp.

National City Bank, Westpool, Hamburg, 2,452 bls. wood pulp.

Baltimore Trust Co., Westpool, Hamburg, 500 bls. wood pulp.

Ira L. Beebe & Co., Inc., Westpool, Bremen, 550 bls. wood pulp.

Castle & Overton, Inc., Mt. Clinton, Hamburg, 2,060 bls. wood pulp.

Castle & Overton, Inc., Westerner, Rotterdam, 894 bls. wood pulp.

Baltimore Trust Co., Westpool, Hamburg, 15 bls. rags.

National City Bank, Artigas, Cardiff, 165 bls. rags.

A. W. Fenton, Inc., Artigas, Cardiu, 61 bls. rags.

Bulkley, Dunton & Co., Navada, ———, 1,752 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING APRIL 25, 1925

Castle & Overton, Inc., Duquesne, England, 32 bls. bagging.

Castle & Overton, Inc., Gand, Antwerp, 225 bls. bagging.

PORTLAND IMPORTS

WEEK ENDING APRIL 25, 1925

Salomon Bros. & Co., Seattle Spirit, Hamburg, 152 bls. rags.

Bulkley, Dunton & Co., Fritz Schoop, ———, 5,388 bls. wood pulp.

CHARLESTON IMPORTS

WEEK ENDING APRIL 25, 1925

E. J. Keller Co., Inc., Sacandaga, Antwerp, 84 bls. bagging.

BOSTON IMPORTS

WEEK ENDING APRIL 25, 1925

G. F. Malcolm, Median, Liverpool, 11 cs. tissue paper.

F. S. Webster, Median, Liverpool, 13 cs. tissue paper.

J. T. Slack Co., Median, Liverpool, 26 bls. rags.

Payne & Stillman, Median, Liverpool, 9 bls. rags.

J. T. Lodge Co., Median, Liverpool, 33 bls. rags.

National Shawmut Bank, Median, Liverpool, 43 bls. rags.

Merchant National Bank, Median, Liverpool, 36 bls. rags.

T. D. Downing & Co., Median, Liverpool, 64 bls. rags.

J. B. Moors & Co., Median, Liverpool, 1,260 bgs. hide cuttings.

Train, Smith & Co., Median, Liverpool, 305 bgs. hide cuttings.

Atlantic National Bank, Median, Liverpool, 25 bls. rags.

J. B. Moors & Co., Median, Manchester, 278 bgs. hide cuttings.

British Bank of South America, Median, Manchester, 123 bgs. hide cuttings.

British Bank of South America, Median, Manchester, 40 bls. bagging.

British Bank of South America, Median, Manchester, 20 bls. rags.

Equitable Trust Co., Median, Manchester, 155 bls. bagging.

W. Schall & Co., Median, Manchester, 113 bls. bagging.

W. Schall & Co., Median, Manchester, 57 bls. rags.

T. D. Downing & Co., Median, Manchester, 204 bls. rags.

Baring Bros. & Co., Ltd., Median, Manchester, 193 bls. rags.

New England Waste Co., Median, Manchester, 9 bls. cotton waste.

New England Waste Co., Median, Manchester, 32 bls. rags.

Baring Bros. & Co., Ltd., Mississippi, London, 125 bls. waste paper.

Brown Bros. & Co., Mississippi, London, 8 bls. rags.

E. Butterworth & Co., Inc., Fluor Spar, London, 79 bls. paper stock.

Salomon Bros. & Co., Napierian, Antwerp, 78 bls. flax waste.

E. J. Keller Co., Inc., Beemsterdyk, Rotterdam, 43 bls. rags.

T. D. Downing & Co., Beemsterdyk, Rotterdam, 40 bls. rags.

Train, Smith & Co., Beemsterdyk, Rotterdam, 415 bgs. picker waste.

Train, Smith & Co., Beemsterdyk, Rotterdam, 180 bgs. cotton pickers.

E. Butterworth & Co., Inc., Beemsterdyk, Rotterdam, 81 bls. rags.

E. Butterworth & Co., Inc., Beemsterdyk, Rotterdam, 45 bls. bagging.

V. P. Roberts Co., West Celina, Liverpool, 3 bls. rags.

C. H. Powell Co., West Celina, Liverpool, 91 bls. rags.

W. T. Lockett & Co., West Celina, Liverpool, 15 bls. rags.

G. M. Graves Co., Inc., West Campgaw, Bremen, 55 bls. rags.

Chemical National Bank, West Campgaw, Hamburg, 37 bls. rags.

State Bank, West Campgaw, Hamburg, 279 bls. rags.

Second National Bank, West Campgaw, Hamburg, 113 bls. rags.

Salomon Bros. & Co., West Campgaw, Hamburg, 75 bls. rags.

Linen Thread Co., Sachem, Liverpool, 86 bls. flax waste.

Castle & Overton, Inc., Seattle Spirit, Hamburg, 102 bls. rags.

Old Colony Trust Co., Sachem, Liverpool, 160 coils old rope.

Dodge Manufacturing Co., West Celina, Liverpool, 7 coils old rope.

Brown Bros. & Co., Mississippi, London, 178 coils old rope.

Brown Bros. & Co., Mississippi, London, 15 bls. old rope.

Brown Bros. & Co., Median, Liverpool, 126 bls. old rope.

Brown Bros. & Co., Median, Liverpool, 109 coils old rope.

Brown Bros. & Co., Beemsterdyk, Rotterdam, 108 coils old rope.

J. Richardson, Greta, Fowey, 622 tons china clay.

Atlantic National Bank, Greta, Fowey, 1,735 tons china clay.

L. A. Salomon & Bro., Greta, Fowey, 25 tons china clay.

Paper Makers' Importing Co., Greta, Fowey, 259 tons china clay.

Morey & Co., Inc., Greta, Fowey, 65 tons china clay.

Nilsen, Lyon & Co., Inc., Topeka, Oslo, 1,000 bls. wood pulp.

Atterbury & McKelvey, Topeka, Tofte, 750 bls. sulphite pulp.

The Borregaard Co., Inc., Topeka, Tofte, 504 bls. sulphite pulp.

Atterbury Bros., Inc., Topeka, Fredrikshald, 2,400 bls. sulphite pulp.

Nilsen, Lyen & Co., Inc., Topeka, Fredrikshald, 600 bls. sulphite pulp.

Buck, Kiaer & Co., Topeka, Greaker, 325 bls. sulphite pulp.

The Borregaard Co., Inc., Topeka, Greaker, 300 bls. sulphite pulp.

J. Anderson & Co., Topeka, Greaker, 3,294 bls. sulphite pulp.

Castle & Overton, Inc., West Campgaw, Hamburg, 560 bls. wood pulp.

Ira L. Beebe & Co., Inc., West Campgaw, Hamburg, 565 bls. wood pulp.

Castle & Overton, Inc., Westerner, Rotterdam, 126 bls. wood pulp.

Lagerloef Trading Co., West Maxims, Kotka, 205 bls. wood pulp boards.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 25, 1925

A. C. Maron, Liberty, Havre, 2 cs. paper lace.

J. Anderson & Co., Inc., Ariosto, Trieste, 1 cs. paper.

Philadelphia National Bank, Mt. Clinton, Hamburg, 7 bls. paper.

National City Bank, Mt. Clinton, Hamburg, 98 bls. rags.

Baring Bros. & Co., Ltd., Mt. Clinton, Hamburg, 123 bls. rags.

Fidelity Intl. Trust Co., Mt. Clinton, Hamburg, 260 bls. rags.

National City Bank, Mt. Clinton, Hamburg, 142 bls rags.

Bank of New York, Mt. Clinton, Hamburg, 31 bls. jute weavings.

Castle & Overton, Inc., Mt. Clinton, Hamburg, 505 bls. rags.

National City Bank, Mt. Clinton, Hamburg, 228 bls. rags.

Reis & Co., Eglantine, Rotterdam, 18 bls. cotton waste.

D. I. Murphy, Eglantine, Rotterdam, 16 bls. rags.

E. J. Keller Co., Inc., Eglantine, Rotterdam, 202 bls. rags.

E. J. Keller Co., Inc., Cabo Hatteras, Genoa, 64 bls. cotton waste.

E. J. Keller Co., Inc., Cabo Hatteras, Barcelona, 40 bls. rags.

E. J. Keller Co., Inc., Mt. Clinton, Hamburg, 144 bls. rags.

E. J. Keller Co., Inc., Delilian, Antwerp, 412 bls. rags.

A. Hurst & So., Delilian, Antwerp, 135 bls. rags.

Second National Bank, Delilian, Antwerp, 49 bls. rags.

(*Continued on page 66*)

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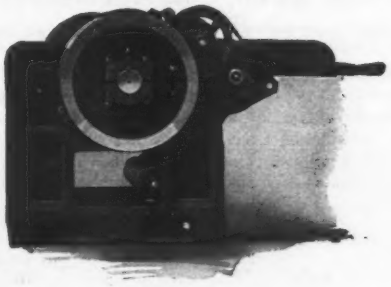

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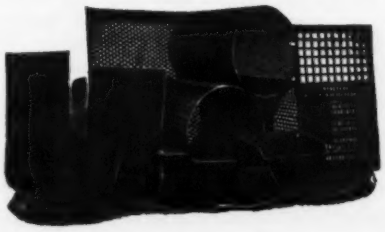

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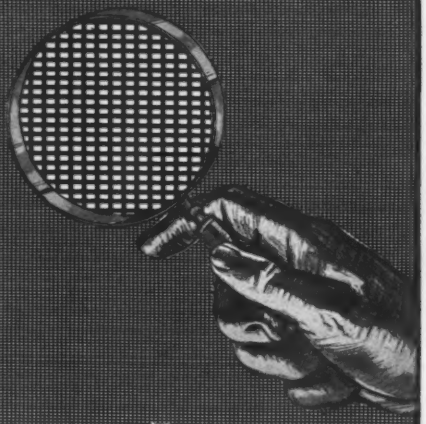

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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, April 29, 1925.

While the paper market is developing no new vigor and while most of the buying is for immediate needs, the optimists are deriving some satisfaction from the fact that what paper is being purchased is immediately put on its way to consumption. This means that the consumers are not hoarding stock and that every new disposition to buy will mean more orders. Consequently it is expected that business will continue in a regular way and that, while there may be no increased volume of orders, there will be a dependable call which will keep the trade from stagnating during the hot summer months ahead. Paper prices are for the most part remaining unchanged. When a change occurs it is slight and the trend is upward rather than downward. Prices in all lines are being well held to and it is seldom that values are more solid than just now. Prices are today unusually reasonable and some of them are so low as to allow a scant profit. For that reason most buyers buy when they are ready without arguing over the price element. It is rather strange in view of this condition that there is not more buying ahead.

News print is still going strong. There has been no lull in the demand and the big metropolitan newspapers are apparently pitted against each other to see which can consume the most news.

Fine paper is having what may be termed a fair demand. Consumers are keeping their stock low and for that reason they are expected to be constant callers on the trade even though their orders may not be large.

The board business has been fair and at this writing seems to be heading toward a betterment. Board mills have been running at capacity for five days a week and the stock has been moving satisfactorily. Business is expected to remain good for some weeks or until the annual summer dullness begins.

Mechanical Pulp

Water and other conditions have been highly favorable to the grinders and ground wood is doing rather better than is customary at this time of the year. Production of pulp is increasing and prices show a tendency to ease off a bit. An easing off at this time will probably be followed by higher prices when summer conditions will tend to hamper production.

Chemical Pulp

Consumption of chemical pulp is encouraging and manufacturers are obtaining about all the business they can handle comfortably. There are some reports of concessions being made but the concessions are not general and not of a sufficient proportion to disturb the market materially.

Old Rope and Bagging

The paper mills are calling for more old rope than they have been for some weeks and prices are holding up. Old bagging is moving a bit better although the demand is still slow. The prices remain unchanged.

Rags

Rags have showed little if any change during the week. Some classes of rags seem to show a little better demand but this is counteracted by a dropping off in demand for certain other classes. Prices have not advanced but they are steadier than they have been and there are indications that they may take a sudden swing upward. Roofing rags are undoubtedly at their low level today and dealers are holding strictly to the prices quoted. New cuttings are in better demand and promise to be selling at a higher price soon. In many of the lines little business is being done at the present time.

Waste Paper

Waste paper seems to be unable to gather any impetus. The demand is very listless and buyers are apparently indifferent to price inducement or anything else. Prices, however, are firm as a rule and dealers say there is little or no chance of any decline. The prices are now extremely low and a further cut would mean an elimination of profits. The buying is of the hand to mouth order and nothing is able to stimulate it beyond that point.

Twine

Twine is getting to be almost a drug on the market. Orders come through like pulling teeth and the twine men have settled down to take what comes to them and to be thankful for it no matter how little it may be.

Imports of Paper and Paper Stock

(*Continued from page 64*)

Castle & Overton, Inc., Delilian, Antwerp, 107 bls. rags.

Amsinck, Sonne & Co., Inc., Delilian, Antwerp, 356 bls. rags.

Kidder, Peabody Accep. Corp., Delilian, Antwerp, 145 bls. rags.

Salomon Bros. & Co., Nevada, Leith, 202 bls. rags.

Penn Rag & Metal Co., London Exchange, London, 73 bls. rags.

W. Schall & Co., London Exchange, London, 47 bls. rags.

Guaranty Trust Co., London Exchange, London, 114 bls. rags.

Fidelity Intl. Trust Co., London Exchange, London, 196 bls. rags.

Salomon Bros. & Co., Collamer, Bordeaux, 233 bls. rags.

New England Waste Co., Dorelian, Manchester, 34 bls. thread waste.

Philadelphia National Bank, Dorelian, Manchester, 42 bls. cotton waste.

R. Wolf, Liberty, Havre, 56 bls. rags.

Castle & Overton, Inc., Liberty, Havre, 128 bls. rags.

Congoleum Nairn Co., Liberty, Dunkirk, 85 bls. rags.

D. I. Murphy, Liberty, Dunkirk, 46 bls. rags.

J. M. Hagy Waste Works, Liberty, Dunkirk, 49 bls. rags.

J. Walworth & Sons, Liberty, Dunkirk, 22 bls. rags.

Castle & Overton, Inc., Liberty, Dunkirk, 307 bls. rags.

Castle & Overton, Inc., Hannover, Bremen, 584 bls. rags.

Scott Paper Co., Nancy, Bridgewater, N. S., 641 tons ground pulp.

Carro Pulp Agency, Nevada, Copenhagen, 27 bls. sulphite pulp.

Castle & Overton, Inc., Mt. Clinton, Hamburg, 550 bls. wood pulp.

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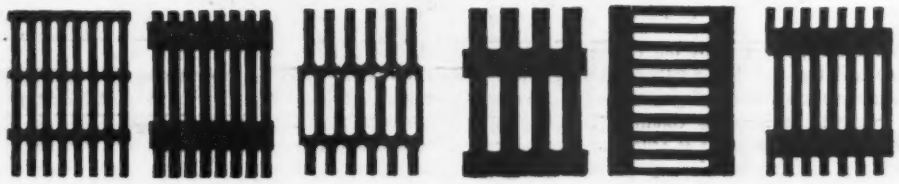

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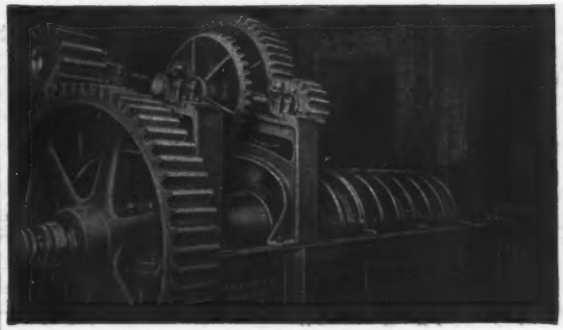

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, April 29, 1925.

The chemical market can get scant joy out of the fact that another month is gone and that the hot weather period is close at hand. April has been none too encouraging and now, as the market stands on the threshold of May, its condition is not such as to promote any too great confidence. It is true that contract tonnage has been moving in a fairly satisfactory manner during the month and that the withdrawals have been about what might normally be expected, but the spot buying has not been anywhere near what it should have been and that is not said of one or two commodities but applies to a greater or less extent to practically every commodity in the line. There have been some commodities which have experienced a temporary spurt but these spurts have always been so temporary and short-lived that they were practically over before the chemical men realized that they were here. At no time during April has there been anything spectacular and, in fact, it has been so long since the market has experienced anything of a sensational character that practically every one has ceased to look for anything of the kind. May holds out none too fair promises. Business may be as good as it has been during April but there is nothing to justify the belief that it will be any better. May will bring some hot wearther and hot weather is always a discordant note in the chemical market. Already it is stated that some of the manufacturers are beginning to tone down production for they are determined to guard against any great accumulation of stock and the future is too indefinite to induce them to gamble on future prospects to a great extent. How far they will go in this curtailment of production all depends on the demand but if the demand should fall off materially at any time a general slackening all along the line of production may be looked for.

BLANC FIXE.—While the demand for blanc fixe is not over abundant it has been fairly satisfactory for several weeks and apparently there has been no sign of a let-up which is regarded as highly satisfactory. Prices are firm and from $60 to $70 a ton is being asked for the pulp while the powder is bringing from $75 to $90 a ton.

BLEACHING POWDER.—For the past two weeks the bleaching powder market has been fairly inundated by rumors of price slashing. As a matter of fact, however, there has been no price cutting and the only basis for the reports have been the fact that there have been some sales of imported stock at 1.70. This is a misleading quotation for when the duty is added it makes the price 2 cents ex dock. Prices as a matter of fact are being rigidly adhered to. Stock is moving sufficiently to keep the available supply down to a proper limit and as hot weather is not far off precautions will be taken from now on to see that the hot spell does not catch the market with a large and unwieldly accumulation. The quotation is still 1.90 cents a pound.

CAUSTIC SODA.—Caustic soda had another enlivening week and is today one of the few commodities which is showing anything like spontaneous energy. Contract tonnage has been moving well right along and spot buying has seemed to pick up a little during the past week. There is no sign of weakening at the present writing and prices are holding firm. It is still being quoted at from 3.10 to 3.15 cents a pound.

CASEIN.—May 1 will find casein in just about the same condition it was on April 1. The demand has been fairly satisfactory all the month and is, perhaps, just as good now with the price holding up at from 12 to 13 cents a pound.

CHINA CLAY.—China clay may be said to be doing fairly well and yet the demand is considerably less than it was six weeks and even a month ago. It is expected that business may show a slight betterment soon but it can at any rate be depended upon to continue at its present pace for some time. The imported grades are today bringing from $16 to $20 a ton and the domestic grades from $12 to $15 a ton.

CHLORINE.—Conditions remain unchanged in the chlorine market which means that the demand is fair. The market has strengthened a little during the past two weeks. The price is from $4.50 to $7.00 a pound in tanks.

ROSIN.—There is no break in the rosin demand and the price continues to fluctuate, showing material change from day to day. It has been tending to higher prices for some weeks but the past week saw it drop slightly although it is a fair presumption that it may go up again before this sees print. From $6.70 to $6.90 is the price now being quoted at the naval stores centers.

SALT CAKE.—Salt cake keeps straight along on its prosperous course. These are proving most favorable days for it. The pulp manufacturers are placing liberal orders and the glass trade, which is just now enjoying unusual prosperity, is placing unusually larger orders for it. Consequently the price is holding strong and the future is full of promise. It is quoted at from $17 to $20 a ton.

SODA ASH.—Soda ash is doing very well although the past week saw a slight falling off in demand. The demand, however, has been very consistent and as most of the soda ash men are well sold up for the balance of the year it will take more than a slight reaction to disturb them materially. The price remains 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—The call for sulphate of alumina also fell off a little during the week. Some of the Eastern manufacturers have already started to curtail production in anticipation of the slackening in demand which usually comes at this season of the year. The commercial grades are bringing from 1.40 to 1.45 cents a pound at the Eastern works and the iron free is quoted at from 2.10 to 2.25 cents a pound.

SULPHUR.—Sulphur shows no change, contract withdrawals being as usual and the price holding at from $18 to $19 a ton.

TALC.—Talc which is showing improvement will apparently continue for some time to enjoy a good call. It is quoted at from $17 to $18 a ton.

Los Angeles Trade News

[FROM OUR REGULAR CORRESPONDENT.]

LOS ANGELES, Cal., April 20, 1925.—Business has slowed up considerably during the past week for no apparent reason. Buying is from hand to mouth. The market has been steady. Twenty-five pound kraft took an advance of $5 a ton or from 5¼ to 6. The advance, however, was made only by the California-Oregon mill. Twine is off two cents and is now 41c for No. 1 super.

Roberts, Otter and Nelson are completing plans for a new warehouse. They are now at 209 North Los Angeles street and expect to be in their new quarters by May 15. They are the largest independent jobbers in Southern California.

A. Dunifer, of the Miami Paper Company was a visitor to the trade during the week.

Augustus Johnson, secretary and general manager of the Everett Pulp and Paper Company, accompanied by Mrs. Johnson, spent several days in Los Angeles recently.

Mr. Gordon, general manager of the Oxford Paper Company, with headquarters in New York City, in company with Mrs. Gordon, are new visiting here.

Joins Chemical & Vacuum Machinery Co.

[FROM OUR REGULAR CORRESPONDENT.]

BUFFALO, N. Y., April 27, 1925.—H. E. Neubauer, formerly assistant chief engineer of the Buffalo Foundry and Machine Company, later vice-president of O. S. Sleeper Company, Inc., has become associated with the Chemical & Vacuum Machinery Company, Inc., as chief engineer.

Clay

300 tons daily

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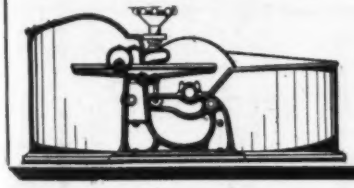

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McKIM FOUNDRY & MACHINE CO., LOCKPORT, N. Y.
Builders of sheet machines, miniature Paper Dryers and Jordans, Slowness Testers, etc.

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	99	102*
Advance Bag and Paper, 7s 1943	97	100*
Aroostook Pulp and Paper, 6s 1925	99	...
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	93	95
Beaver Board, 8s 1933	87	89
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Board, N. Y. Curb, 8s 1933	93	95
Beaver Products Corp., 7½s 1942	102	104
Belgo Canadian Paper, 6s 1943	99	100
Brown Paper Co., 8s 1931	102	105*
Berlin Mills, 5s 1931	99	...
Bryant Paper Co., 6s 1942	98	101
Brown Company Serial, 6s 1925-43	97	100
Central Paper, 6½s 1925-42	90	95
Cape Breton Pulp and Paper, 6s 1932	98	102
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	97	100*
Chicoutimi Pulp Co., 6s 1943	63	...
Donnaconna Paper Co., Ltd., 6s 1940	98	100
Eddy Paper, 7s 1931	96	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	84	88
Fox River Paper, 7s 1931	98	102
Fort Orange Paper Co, 7s 1942	95	99
Eddy Paper Co., 7½s 1931	94	98
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	98	...
Hercule Corp'n, 8s 1936	98	101
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	93	97
Kenmore Pulp and Paper Co., 6s 1937	89	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	103	105
Mengel Company, 7s 1934	100	103
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	101	103*
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	99	...
Parsons Pulp & Lumber 1st 7s 1928	95	...
Paterson Parchment Paper, 5½s 1927-28	98	99
Paterson Parchment, 6s 1938	97	99
Parker, Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	99	101
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A, 8s 1940	108	110
Riordan Paper, 6s 1924	91	94
Riordan Pulp and Paper, Ltd., 6s, 1929	28	30
River Raisin Paper, 8s 1936	104	106
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	93	95
Smith (Howard) Paper Mills, 6s 1934	94	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	88	92
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
Whittaker Paper, 1st 7s 1942	95	...
Watab Paper Co., 6½s 1942	100	103*
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	87	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	65	67
Abitibi Power and Paper, Pfd	106	115*
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	70	75*
Beaver Board, Com	5	8
Beaver Board, Pfd	38	45
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Brompton Pulp and Paper, Cap	24	26
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	253	...
Howard Smith Paper Co., Com	22	23
Howard Smith Paper Co., Pfd	70	75
Jessup & Moore Paper, Pfd	74	78
International Paper Co., Com	53	55
International Paper Co., Pfd	72	74
Mengel Company, Com	43	45
Mengel Company, Pfd	76	...
Oxford Papers, Com	93	97
Oxford Paper Co., Pfd	...	101
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	...	39
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	83	88
St. Regis Paper Co., Cap	36	40
Smith (Howard) Paper Co., Ltd., Com	25	28
Smith (Howard) Paper Co., Ltd., Pfd	85	87
Spanish River Pulp and Paper, Com	105	107
Spanish River Pulp and Paper, Pfd	115	...
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper. Cap	44	47
West Virginia Pulp and Paper, Pfd	85	100
Whittaker Paper, Com	13	...
Whittaker Paper, Pfd	50	...

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—		
White No. 1	.70	@ .90
Colored	1.00	@ 2.00
White No. 2	.70	@ .80
Anti-Tarnish	1.25	@ 2.50
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	4.50	@ 4.75
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.25	@ 9.50
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 6.00
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.25	@ 3.75
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	47.50	@50.50
Straw	57.00	@60.00
Chip	50.00	@52.50
Binders' Boards	72.50	@77.50
Sgl. Mla. Ll. Chip	60.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	34.00	@38.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.25
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.45	@ 2.80
No. 1 Kraft	2.90	@ 3.00
Sulphate—		
Bleached	3.75	@ 3.95

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.75	@ 4.50
Easy Bleaching Sulphite	2.90	@ 3.25
News Sulphite	2.45	@ 2.75
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.70	@ 3.25
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.50	@15.25
New White, No. 2	8.00	@10.00
Silesias No. 1	10.50	@11.50
New Unbleached	14.00	@15.00
Washables	6.50	@ 9.25
Fancy	975	@10.25
Blue Overall	10.25	@11.25
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	5.75	@ 6.50
Pink Corset Cuttings	10.50	@11.00
Pink Muslin	10.25	@10.75
New Light Seconds	3.25	@ 7.50
O. D. Khaki Cuttings	6.50	@ 7.50
Men's Corduroy	6.25	@ 6.75
New Mixed Blacks	4.00	@ 5.00

Old Rags

White, No. 1—		
Repacked	8.00	@ 9.00
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.75	@ 5.25
Miscellaneous	4.00	@ 4.50
St. Soiled, White	3.00	@ 3.50
Thirds and Blues—		
Repacked	4.00	@ 4.25
Miscellaneous	3.25	@ 3.50
Black Stockings	4.00	@ 4.50
Roofing Rags—		
Cloth Strippings	3.15	@ 3.25
No. 1	3.15	@ 3.25
No. 2	2.85	@ 3.05
No. 3	2.00	@ 2.25
No. 4	2.75	@ 2.85
No. 5A	1.80	@ 1.50

Foreign Rags

New Light Silesias	9.50	@10.50
Light Flanneliettes	11.00	@12.00
Unbl'ched Cottons	14.00	@15.00
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@11.00
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.75
New Dark Cuttings	3.75	@ 4.25
No. 1 White Linens	10.25	@11.25
No. 2 White Linens	7.50	@ 8.50
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.75
Ord. Light Prints	3.75	@ 425
Med. Light Prints	3.75	@ 4.25
Dutch Blue Cottons	4.00	@ 4.50
Ger. Blue Cottons	4.00	@ 4.25
Ger. Blue Linens	425	@ 4.75
Checks and Blues	3.50	@ 3.75
Linsay Garments	2.35	@ 2.45
Dark Cottons	2.25	@ 2.35
Shoppery	2.15	@ 2.25
French Blues	4.00	@ 4.50

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.00	@ 3.10
Domestic	3.15	@ 3.25
Wool Tares, light	2.60	@ 2.70
Wool, Tares, heavy	2.70	@ 2.80
Bright, Bagging	2.55	@ 2.65
Mixed Bagging	2.30	@ 2.40
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.60	@ 1.70
Manila Rope—		
Foreign	6.50	@ 7.00
Domestic	6.75	@ 7.25
New Bu. Cut	3.50	@ 4.00
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.60	@ 3.90
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	2.90	@ 3.15
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag.	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.80	@ 1.90
Ledger Stock	1.60	@ 1.70
New B. R. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.45	@ 2.60
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	.70	@ .90
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.05	@ 2.15
News—		
No. 1 White News	1.95	@ 2.10
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.65	@ .75
Common Paper	.45	@ .55

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .61

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Finished Jute—			
Dark, 18 basis...	.30	@	.31
Light, 18 basis...	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.20	@	.23
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger.	.15	@	.17
Fine Tube Yarn—			
5-ply and larger.	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14	@	.15
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Amer. Hemp, 6....	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis.....	.14	@	.16
No. 2 Basis.....	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond.....	35	@	40
No. 1. Rag Bon..	25	@	35
No. 2 Rag Bond..	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond.....	7	@	10¼
Sulphite Ledger ...	9½	@	14
Superfine Writing..	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book..	5½	@	7½
No. 1 S. & S. C. Book	6½	@	7¾
Coated Book	8	@	10
Coated Label	8	@	10
News—Roll, mill...	3½	@	4½
News—Sheets, mill.	3¾	@	4¾
No. 1 Manila.....	4½	@	5½
No. 1 Fibre.....	4½	@	5½
No. 2 Manila.....	3¾	@	4¾
Butchers' Manila...	4	@	4½
No. 1 Kraft.....	5¾	@	6¼
No. 2 Kraft.....	4.50	@	5.00
Wood Tag Boards..	4¼	@	6
Sulphite Screenings.	3.00	@	3.25
Manila Tissue, 24x36 sheet	7½	@	8
White Tissue, 20x30 sheet	7	@	7¾
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip 45.00		@	47.50
Solid News 47.50		@	50.00
Manila Line Chip.57.50		@	60.00
Container Lined—			
(Delivered Central Territory)			
85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.15	@	3.25
White Envel. Cuttings.....	3.15	@	3.25
No. 1 Soft Shav.	2.65	@	2.75
No. 1 Mixed.....	1.45	@	1.50
No. 2 Mixed.....	1.15	@	1.20
Ledger and Writings	1.50	@	1.55
Solid Books	1.40	@	1.45
No. 1 Light Books.	1.00	@	1.05
Blanks	1.90	@	1.95
Kraft	2.05	@	2.10
New Kraft Cuts.	2.30	@	2.35
Manila Envelope Cuttings.....	2.40	@	2.50
Ex. No. 1 Manila..	2.00	@	2.10
Print Manila	.90	@	.95
Folded News (overissue)	.85	@	.90
Old Newspapers—			
No. 1	.70	@	.75
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.55	@	.60
No. 2	.50	@	.55
Straw Clippings....	.75	@	.80
Binders' Clippings..	—	@	.70
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	30.00	@	35.00
No. 2	28.00	@	33.00
No. 3	26.00	@	31.00
No. 4	20.00	@	25.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.08½	@	.12
Rag Content.....	.17	@	.45
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.22	@	.50
News	.04	@	.06½
Book, M. F.....	.07	@	.12
Book, Super.....	.08½	@	.13
Book, Coated.....	.09	@	.20
Coated Litho.....	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1.	.11	@	.12
Manila, Sul. No. 1.	.05	@	.05
Manila, Sul. No. 2.	.03¾	@	.04¼
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Bogus	.03½	@	.04
Straw Board	—	@	50.00
News Board	—	@	52.50
Chip Board	—	@	50.00
Single Manila Pulp lined board.....60.00		@	65.00
Single White, patent coated board 77.50		@	85.00
Wood Pulp Board..80.00		@	85.00
Binder Boards 75.00		@	85.00
Tarred Felts—			
Regular 61.00		@	63.00
Slaters 66.00		@	68.00
Best Tarred, 1 Ply, roll 1.50		@	1.60
Best Tarred, 2 Ply, roll 1.70		@	1.80
Best Tarred, 3 Ply, roll 2.00		@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News.	1.75	@	2.00
Manila Env. Cuttings.....	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White..	.04¼	@	—
No. 2 Soft White..	.03¼	@	—
No. 1 Mixed.....	1.60	@	1.75
No. 2 Mixed.....	1.25	@	1.50
Solid Ledger Stock.	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.75	@	1.85
No. 1 Books, Light.	—	@	1.50
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila.	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News ...	1.00	@	1.20
Old Newspapers	.70	@	.75
No. 1 Mixed Paper.	.60	@	.65
Box Board, Chip...	.60	@	.65

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.00
Domestic	—	@	3¼
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	2½
Scrap burlaps....	—	@	3.00
Wool Tares, heavy.	—	@	3.00
Mixed Strings..	—	@	2.25
New Burlap Cuttings	—	@	3.75

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1..	.11	@	—
New Unbleached.	.14¼	@	.15
Washable	.07¼	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls....	.12½	@	—
New Black, soft...	.07	@	—
Khaki Cuttings....	.07	@	—
Corduroy	.04	@	.04½
New Canvas.....	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1.....10.00		@	—
Repacked 9.50		@	—
Miscellaneous 8.50		@	—
White No. 2—			
Repacked 6.50		@	—
Miscellaneous ... 5.25		@	—
Thirds and Blues—			
Repacked 5.00		@	—
Miscellaneous ... 3.50		@	—
Roofing Stock—			
No. 1..... 3.90		@	—
No. 2..... 3.00		@	—
No. 3..... 2.50		@	—
No. 4..... 2.00		@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2.....	.16	@	.25
Fine, No. 3.....	.12	@	.20
Book, M. F.....	.06	@	.07
Book, S. S. & C..	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph..	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila.	.09½	@	—
Manila Sul., No. 1.	.04½	@	.06
Manila No. 2.....	.04	@	.04¼
No. 2 Kraft.....	.05	@	.05½
No. 1 Kraft.....	.06¼	@	—
Common Bogus.....	.02¾	@	—
Straw Board.....	55.00	@	60.00
News Board	52.50	@	—
Chip Board	52.50	@	—
Wood Pulp Board..	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply.	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope.....	6.25	@	6.50
Sisal Rope	2.50	@	—
Mixed Rope	1.50	@	1.75
Scrap Burlaps....	2.25	@	2.50
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings...	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.65	@	3.70
No. 2 Hard White	3.25	@	3.40
No. 1 Soft White	2.70	@	2.80
No. 2 Soft White	1.80	@	2.00
No. 1 Mixed....	—	@	1.50
No. 2 Mixed....	1.25	@	1.30
Solid Ledger Stock.	1.75	@	1.90
Writing Paper.....	1.60	@	1.65
No. 1 Books, heavy	1.35	@	1.40
No. 2 Books, light.	1.15	@	1.25
No. 1 New Manila.	2.40	@	2.50
No. 1 Old Manila..	1.50	@	1.75
Container Manila ..	.85	@	.90
Old Kraft	2.00	@	2.10
Over issue News...	.90	@	.95
Old Newspaper.....	.60	@	.65
No. 1 Mixed Paped.	.50	@	.55
Common Paper.....	.30	@	.35
Straw Board, Chip.	.60	@	.65
Binders Bd., Chip..	.60	@	.65

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06½	@	—
Silesias, No. 1....	.10½	@	.11
New Unbleached.	.14	@	.14½
Washable	.07¾	@	.08¼
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall.....	.11	@	.11½
New Blue	.04	@	.04¼
New Black Soft.	.06	@	.06¼
New Light Seconds	.03½	@	.03¾
Khaki Cuttings..	.06½	@	.07
Corduroy	.04	@	.04½
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05¼

Old

White, No. 1—			
Repacked	7.00	@	7.25
Miscellaneous ...	6.25	@	6.50
White, No. 2—			
Repacked	.05½	@	.05¾
Miscellaneous ...	.05	@	.05¼
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous ...	3.15	@	3.25
Black Stockings..	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11½	@	.12½
Light tinted.....	.12½	@	.13½
Dark tinted.....	.14	@	.15
Ledgers (sulphite)..	—	@	.13
Ledgers No. 1.....	34	@	
Ledgers No. 2.....	26	@	
Writing	.09½	@	
Writing S. C.....	.10	@	
News f. o. b. Mills—			
Rolls (carloads)..	3.65	@	—
Sheets (carloads).	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	8.25	@	—
No. 2 M. F. (carloads)	7.95	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads	8.75	@	—
No. 2 S. C. (carloads)	8.25	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho 14.50		@	—
No. 2 Coated and litho 13.50		@	—
No. 3 Coated and litho 12.75		@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rag	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila...	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.....	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....	30.00	@	35.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	60.00
Sulphite, bleached.	80.00	@	
Sulphate	62.50	@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.60	@	—
Soft White Book shavings	3.25	@	—
White Blk, News.	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers....	1.40	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas..	1.00	@	—
Kraft	2.15	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Folded News....	.80	@	—
No. 1 Mixed Papers	.60	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto		Per lb.	
No. 1 White shirt cuttings	.15	@	.15¼
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites..	—	@	—
Third and blues....	.05½	@	.05¾